



SOL

AMAZING

Lycophytes & Ferns of
the Solomon Islands



Cheng-Wei Chen Leon Perrie David Glenney Wen-Liang Chiou

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CHENG-WEI CHEN LEON PERRIE DAVID GLENNY WEN-LIANG CHIOU



Ministry of Forestry and Research
The Solomon Islands



財團法人國際合作發展基金會
International Cooperation and Development Fund



國立自然科學博物館
National Museum of Natural Science



翠巖悼雪植物保種中心
Dr. Cecilia Koo Botanic Conservation Center

Published by National Museum of Natural Science
1 Kuan-Chien Rd., Taichung city, Taiwan
www.nmns.edu.tw

Published in July 2017
Printed in Taiwan

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Cover design: Cheng-Wei Chen

Book design: Cheng-Wei Chen, Viet Dai Dang

Typesetting and printing: Kunyi Color Reproduction Co., Ltd.

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ISBN: 978-986-05-2972-2

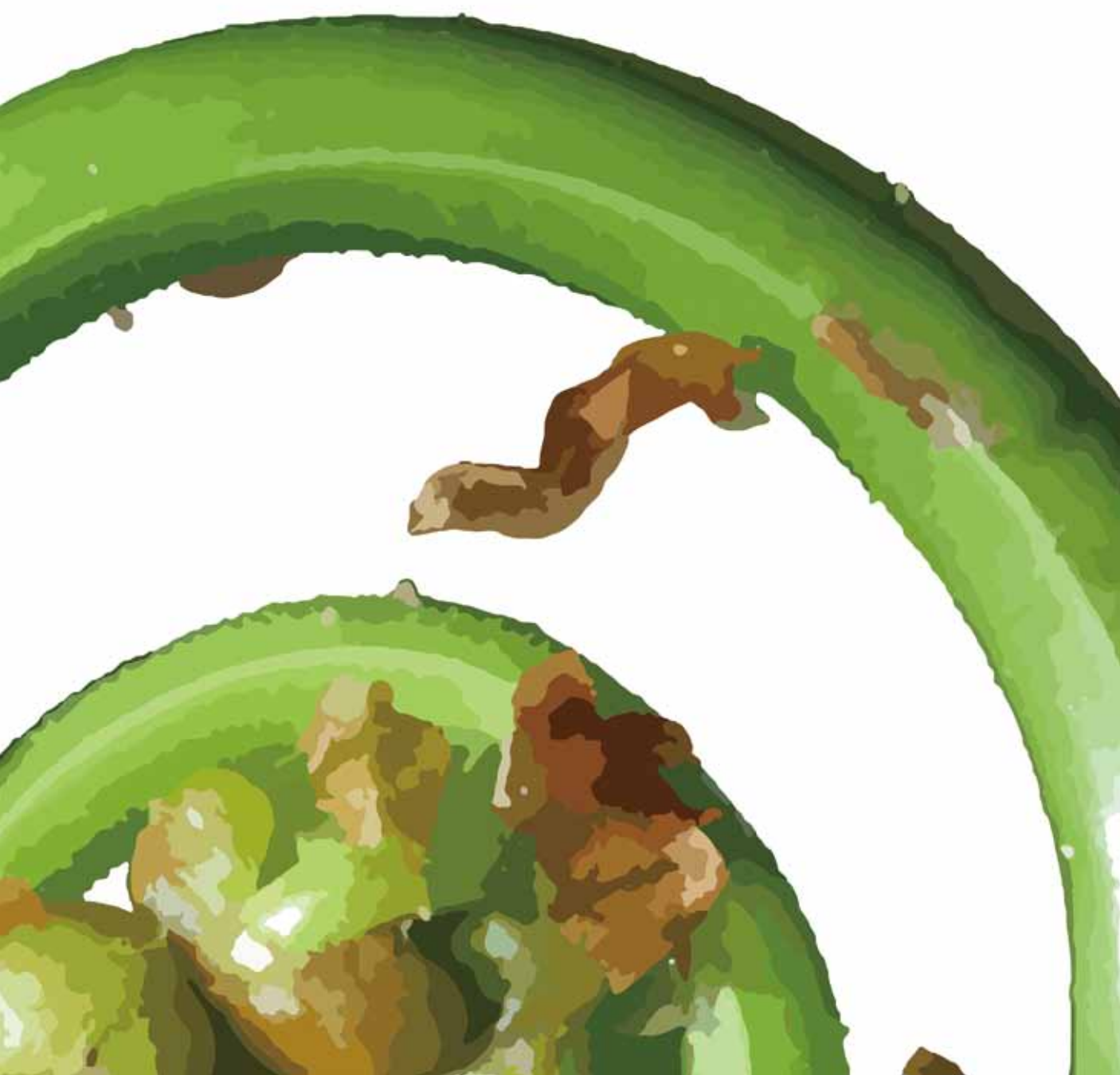
GPN: 1010600963

Price: 2,000 NTD

This book can be cited as:

Chen CW, Perrie L, Glenny D, Chiou WL. 2017. *Sol amazing: lycophytes and ferns of the Solomon Islands*. National Museum of Natural Science, Taichung, 550 pp.

Cover: The “Nguzu Nguzu” holding a plant of *Schizaea*.







Mt. Rano, Kolombangara Island, Western Province.





San Jorge Island, Isabel Province.



This book is dedicated to our friend and local guide Moffat Fanerri. His hard work in the field made this book possible to be published.

CONTENTS

Moffat showing a plant of *Schizaea* on the way to Mt. Veve, Kolombangara Island, Western Province.

About the authors	x
Foreword	xiii
Recommendation	xxi
Preface	xxii
Acknowledgements	xxiv



1



22



38



526



532



546



ABOUT THE AUTHORS



Cheng-Wei Chen

Cheng-Wei Chen is a research assistant in Taiwan Forestry Research Institute. Cheng-Wei's academic interest has been using the integrated approach to study fern systematics and taxonomy, with a focus on the Old World genera of vittarioid ferns. He is a fern-maniac with many field experiences in China, Indonesia, Japan, Malaysia, Taiwan, The Philippines, Vietnam, and all across the Solomon Islands.



Leon Perrie

Leon Perrie is the Curator of Botany at the Museum of New Zealand Te Papa Tongarewa. His principal research involves the evolutionary history and classification of New Zealand's ferns. Publications have focused on taxonomy, nomenclature, polyploidy, biogeography, and phylogeny. He also has a strong interest in understanding the diversity of ferns of the southwest Pacific. Leon has collected ferns in Australia, Fiji, New Caledonia, and the Solomon Islands, and photographed ferns (while on holiday) in Niue, Tonga, and Vanuatu.



David Glenny

David Glenny is a plant taxonomist at the Allan Herbarium, Landcare Research Lincoln, New Zealand, working on liverworts and flowering plants of New Zealand. He spent two years in the Solomon Islands in 1990–1992 as a volunteer, working at the Honiara herbarium. Ferns were a special interest of his during those two years. He collected 750 fern specimens for the Honiara herbarium and drafted a fern flora, which remains unpublished.



Wen-Liang Chiou

Wen-Liang Chiou is an emeritus curator of the Taiwan Forestry Research Institute herbarium (TAIF). He fell in love with ferns during his undergraduate years and it is a love he has never regretted. He has, with colleagues, published hundreds of papers on ferns, exploring their taxonomy, systematics, gametophytes, reproductive biology, phenology, hybridization, polyploidization, evolution, etc. He enjoys traveling widely to collect specimens and spending time on ferns in the herbarium.



Oct. 26 2012, a meeting in the Ministry of Forest & Research.

FOREWORD

Such a delightful surprise! Following the publication of *Field Guide to the Plants of Solomon Islands* in September, 2016, *Sol Amazing: Lycophytes and Ferns of the Solomon Islands* is to be published in July, 2017, an achievement that is well captured by the book title: Sol Amazing!

The memorandum of cooperation for the "Solomon Islands Vegetation Resource Survey and Flora Compilation Project" was signed with the Government of the Republic of China, Taiwan in June, 2012. Throughout the past five years, abundant research achievements have been accomplished through this project, including the collection of plant specimens, in vivo plant preservation, and the publication of two books.

As we are all aware, the team members responsible for executing this project have visited 9 provinces of the Solomon Islands and collected specimens of more than 12,000 plants. Among them, more than 25% are ferns. It is incredible that the team has been able to identify and describe these specimens and furthermore publish *Sol Amazing: Lycophytes and Ferns of the Solomon Islands* in such a short period of time. The book is co-authored by four renowned pteridologists, Mr. Cheng-Wei Chen and Dr. Wen-Liang Chiou of Taiwan, and Dr. Leon Perrie and Dr. David Glenny of New Zealand. Thanks to their expertise and cooperation, not only is the diversity of ferns in the Solomon Islands fully exhibited in this book, the general public is furthermore afforded the opportunity to learn about our ferns and plant resources. In the future, we hope to be able to provide training to more pteridologists and consolidate the study of plant sciences within the Solomon Islands. Our ultimate aims are to continue educating people across the world to learn of and become familiar with our ferns and enabling them to acquire both field collection techniques and conservation knowledge so as to ensure the sustainability of our natural resources.

I believe the publication of this book will not only facilitate the introduction of local ferns to our own people, but will moreover reveal to a global readership the diversity and uniqueness of our fern species. It is also greatly hoped that we will be able to make good use of the abundant research outcomes of this project to put forth more publications in the future, develop more research on diversity, and expand the scope of our conservation work. For the publication of this book, I would like to express my sincere gratitude to our colleagues from the Ministry of Forest & Research, Dr. P.S. Vaeno Vigulu, Fred Pitisopa, Myknee Sirikolo, and our colleagues from the Forestry Department. Moreover, my deep appreciation is especially extended to the forest departments of various regional governments for their cooperation and invaluable support.

Lastly, I am delighted to see the publication of this book, and sincerely wish prosperity to both Taiwan and the Solomon Islands and good health to the heads of state of these two nations.

Hon Chris Laore
Minster of the Ministry of Forest & Research
Solomon Islands



"Recording the Glory of a Beautiful Island Nation with the Sweat of our Striving Staff"

In October of 2016, I traveled to the Solomon Islands under the arrangements of Dr. Tsung-Yu Yang, who was one of the main researchers working on the project of Investigation of Plant Resources and Compilation of the Flora for Solomon Islands. As my plane landed in Honiara International Airport, I suddenly realized that this plant collection project, funded by the International Cooperation and Development Fund, is already in its fifth year. I was so grateful that I finally had the chance to visit the collection site in person to witness this land of abundant native plants.

My previous understanding of the Solomon Islands was limited to the Battle of Guadalcanal which marked the beginning of US offensive operations during WWII. The geographic location of the Solomon Islands is right on the US supply and communication route to Australia and New Zealand, and this was why the battle that took place on this tropical island in August of 1942 was inevitable. After I stepped off the plane, I walked on the beach, taking in the beautiful azure ocean and tropical palm trees swaying along the shore; it was a breathtaking sight which took all my worries away. It is only when I saw the mast of a sunken ship sticking out from the surface of the sea near the shore did I suddenly realize that the scars left from that battle three quarters of a century ago have yet to disappear from this island.

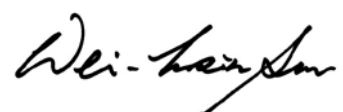
But today, sustainable development of this island country is no longer threatened by war, but by the swift disappearance of native plants caused by large-scale timber export. Solomon Islands is one of the few countries in the world that still permit the export of logs, and the mountains of logs piled by the shore is enough to worry researchers. Professor Tetsuo Koyama from Japan wanted to invite the National Museum of Natural Science to take over the plant collection project; therefore botanists from all over Taiwan gathered forces, hoping to record the green glory of this beautiful country.

In May of 2012, I met with the Prime Minister of the Solomon Islands in Taipei, and with great support from the International Cooperation and Development Fund, the project was launched. Institutions such as the National Museum of Natural Science, Dr. Cecilia Koo Botanic Conservation and Environmental Protection Foundation, Taiwan Forestry Research Institute, Endemic Species Research Institute, and National Taiwan University all sent representatives to travel to the faraway South Pacific, into the primitive rain forests, to collect specimens of native plants with the help of locals to catalog at the local herbarium, and also bring specimens back to Taiwan for further categorization and research in various institutions.

During the ROC National Day Celebration Reception which took place on October 10, 2016 in the Solomon Islands, I felt truly proud of Taiwan as I handed the first published copy of the plant catalog to the Acting Prime Minister of the Solomon Islands after Ambassador Victor Yu's introduction, witnessed by the local officials! Distinguished guests from around the world could all see that Taiwan has made significant contributions in the academic research and education promotion of the Solomon Islands.

I was even more touched and thankful to see that the second publication titled "Sol Amazing: Lycophytes and Ferns of the Solomon Islands" is about to be published after the hard work of Mr. Cheng-Wei Chen, Dr. Leon Perrie, Dr. David Glenny, and Professor Wen-Liang Chiou. After five years of hard work, data collected by these researchers will now finally become fascinating academic and promotional work; systematically introducing the plant life on this island nation to the entire world. This is not only a great academic achievement, but also a fine example of helping out allies in the international community! I would like to thank every person and organization that took part in this wonderful project!

Wei-Hsin Sun
Director General
National Museum of Natural Science



「用勞苦汗水記錄一個美麗島國曾經有過的輝煌」

2017 年的 10 月，在科博館索羅門計畫的主要執行者楊宗愈博士的安排下，我來到了索國，飛機降落在霍尼亞拉的機場上，想著國合會支持的這個植物採集計畫已經邁入第五年，而我終於有機會來到採集現場，心裡充滿感激，想著要親眼看看這個原生植物無比豐富的地方。

原先我對索國的瞭解，僅限於二次大戰改變美日攻守之勢的瓜島戰役，索國的地理位置剛好掐住了美國對澳紐運補的咽喉，因此 1942 年 8 月在這個熱帶島嶼上爆發的戰爭也就無可避免，今天下了飛機走在海邊，美麗湛藍的海洋和岸邊搖曳的熱帶棕櫚，只讓人身心舒暢樂以忘憂，直到看到近岸突兀冒出海面的沈船桅杆，才猛地發現，這場四分之三世紀前的戰役所留下的痕跡，並未從這個島上消失。

但今天影響這個島國永續發展的，已經不是侵略戰爭和機槍大砲，而是因為大量出口原木而迅速消失的原生植物！索國是世界上少數仍允許原木完整出口的國家，也因此在海邊看到層層堆疊的木山，就讓我們的研究人員心急如焚，日本的小山鐵夫教授年事已高，希望能邀請科博館接手採集計畫，於是臺灣的植物界就匯聚力量，希望能為這個美麗的國家紀錄曾經有過的輝煌。

2012 年 5 月，博物館同仁在臺北和當時的索國總理見了面，而在國合會的大力支持下，這個計畫於焉開始，國立自然科學博物館、財團法人辜嚴倬雲植物保種暨環境保護發展基金會、行政院農業委員會林業試驗所、行政院農業委員會特有生物研究保育中心、國立臺灣大學等各個機構，派出研究和採集人力前往遙遠的南太平洋，深入蠻荒煙障的熱帶雨林，在當地人協助下採集原生植物，不只在當地的標本館存留紀錄，也帶回臺灣分送各機構，進行後續的分類研究。

當我在 2016 年 10 月 10 日索國的中華民國國慶酒會上，在於德勝大使的引言之後，將剛出版的第一本圖錄交到索國代理總理手上，看到索國官員驚喜的表情，心裡著實為臺灣感到驕傲！現場的各國嘉賓也看得出來，臺灣對索國的學術研究和教育推廣，確實幫上了忙！

看到第二本出版物「索羅門群島蕨類植物圖鑑」在陳正為先生、Dr. Leon Perrie、Dr. David Glenny 和邱文良老師的努力帶領下即將問世，心中更有著滿滿的感動與感謝！五年下來研究人員的辛苦累積，如今將一步一步的化為精彩有料的學術和推廣作品，有系統地將這個島國的植物相介紹給全世界，這是學術上的貢獻，也是國際上扶助友邦的良好範例！在此感謝所有為這個精彩計畫出力的機構和個人！

國立自然科學博物館 館長

許維新

"A New Chapter of International Cooperation: Passing on Biodiversity for the Solomon Islands"

Five years of hard work and cooperation between the International Cooperation and Development Fund (Taiwan ICDF), National Museum of Natural Science, and the Dr. Cecilia Koo Botanic Conservation Center has culminated in great success for Taiwan's first biodiversity-based foreign aid program. Our first illustrated collection of the vegetation of the Solomon Islands was published in 2016. Since then, teams of scientists have continued to visit the islands to conduct on-site field surveys this year and the results have been compiled into a second, professional illustrated collection, *Sol Amazing: Lycophytes and Ferns of the Solomon Islands*. I would like to thank everyone who participated along each step of the project. They have successfully opened a new chapter for Taiwan's international ecological conservation efforts and left behind valuable records for our friends in the Solomon Islands.

The Taiwan ICDF is a professional foreign aid agency set up by the Government of the Republic of China (Taiwan). Our strategies are aligned with the United Nations' Sustainable Development Goals (SDGs) in the fight to eliminate development gaps and we take a pragmatic approach to combining SDGs into various programs. For us, the most important result of sustainability is the meaningful and positive influences it brings about for our friends, which are then passed down to the next generation. I remember on my last visit to the Solomon Islands, I went with the Taiwan Technical Mission to the central market to get a sense of how local agriculture was produced and sold. There I discovered that in addition to traditional root crops common to the South Pacific, many farmers were also selling the Asian vegetables they planted themselves. This is but one outcome of our efforts in sustainability: helping the residents recognize crops conducive to maintaining a balanced diet. These vegetables become internalized into their diet and are eventually passed on to the next generation. Similarly, the publication of plant illustrations documents species endangered in the Solomon Islands through collection, preservation, and research. It reminds us of the great value of biodiversity and that we must do our best to protect each species and pass them on to the next generation.

It is also worth mentioning that this project acted as a platform for cooperation. On the one hand, it called on Taiwan's scientists in the fields of plant science to preserve plants in danger of extinction because of extensive logging, and on the other hand, provided scientists with a chance to explore the ecology of the Solomon Islands, accumulate research materials, and publish academic works. The project highlights the importance of mutual benefit in aid programs. We would be honored to see the materials collected in this project continue to be utilized to enrich Taiwan's research and understanding of the South Pacific region and drive ever more multifaceted relationships between the two countries.

For the publication of this second illustrated collection, I would like to thank Director-General Sun of the National Museum of Natural Science and Director Li of the Dr. Cecilia Koo Botanic Conservation Center for their enthusiastic leadership; I would also like to express my gratitude to the Ministry of Foreign Affairs and the Embassy of the Republic of China (Taiwan) in Solomon Islands for their full-hearted support. Because of cooperation from all parties involved, we were able to complete the project and begin a new era for foreign aid work, leave behind valuable records for our friends in the Solomon Islands, and win international recognition and attention for Taiwan's plant science community.

Amb. Weber V.B. Shih
Secretary General Taiwan ICDF



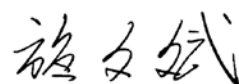
開啟國際合作新篇章 為索羅門傳承生物多樣性記憶

歷經五年的努力，在財團法人國際合作發展基金會（國合會）、國立自然科學博物館（科博館）與辜嚴倬雲植物保種中心的攜手合作下，我國首項以生物多樣性為主題的援外計畫創造了亮眼成果。繼 2016 年出版的首本索羅門植物圖鑑，今年再接再厲，集合一批又一批的植物學者赴索國實地採集調查，匯集成第二本的專業圖鑑「SOL AMAZING: LYCOPHYTES AND FERNS OF THE SOLOMON ISLANDS」，本人要特別感謝在計畫執行過程中貢獻心力的所有參與者，為我國參與國際生態保育寫下新頁，也為我國的忠實友邦索羅門留下珍貴的紀錄。

國合會做為政府設置的專業援外機構，呼應聯合國「永續發展目標」（SDGs）做為國際社會消弭發展落差共同願景，務實地在各項計畫中導入 SDGs 的精神與指標。對於我們來說，「永續」的最重要價值在於為友邦留下有意義且世代傳承的正面影響。還記得最近一次造訪索羅門，本人隨著技術團同仁前往中央市場了解當地農業產銷實況，發現除了南太平洋地區常見的傳統根莖作物以外，還有相當數量的農民販售自己種的東方蔬菜，這其實就是我國提供農業技術援助留下的「永續」成果，讓索國人民認識有助於營養均衡的作物，從而一代一代內化至他們的飲食習慣中。同樣地，此次所出版的圖鑑也有著類似的意義，透過採集保存與研究出版，為索羅門留下瀕危物種的身影紀錄，提醒我們生態多樣性的可貴，應該努力保護並傳承給下一代。

另外值得一提的是，本計畫扮演了平台的角色，一方面借助國內植物科學界的力量，協助索羅門保存因伐木而面臨生存壓力的植物，另一方面則是透過臺索雙邊合作機制，讓國內植物科學界有機會一探索國的生態環境，累積研究素材並發表學術著作，彰顯我援外計畫「互惠互利」的重要性。我們樂見各界持續運用本計畫所累積的素材，豐富我國對於南太平洋地區的研究與認識，為兩國之間的關係灌注更多元的動力。在第二本圖鑑出版之際，本人再次感謝科博館孫館長及保種中心李執行長所帶領團隊的熱情參與，也感謝外交部與駐索羅門大使館的鼎力支持，因為各方的通力合作才能成就整個計畫，不僅為我國的援外工作開啟新篇章，也為友邦索羅門留下足以傳承後世的寶貴紀錄，同時也讓我國植物科學界獲得國際肯定與注目。

財團法人國際合作發展基金會 秘書長



The Republic of China (Taiwan) and the Solomon Islands have maintained cordial diplomatic ties for many years. During the past decades, Taiwan has assisted the Solomon Islands government in developing agriculture, medical care, public health, education, tourism, and rural infrastructure. Taiwan's role in improving the standard of living of rural residents, as well as advancing medical and agricultural technologies, is recognized by the Solomon Islands government and society, with all regarding Taiwan as a true ally of the Solomon Islands.

In light of the threat of global warming to the Solomon Islands, efforts in species conservation are urgently needed to preserve the diverse ecological environment. Taiwan began collaborating with the Solomon Islands in the "Investigation of Plant Resources and Compilation of the Flora for Solomon Islands" in 2012, and donated the largest greenhouse with the most complete collection of plant species in the Solomon Islands. In total, over a hundred visits were made by different experts to the Solomon Islands to collect and investigate the flora, and also provide assistance with the training of local professionals in species gathering. The "Field Guide to the Plants of Solomon Islands" was published under these collective efforts, and benefits the Solomon Islands in plant species conservation, specimen preservation, biodiversity conservation, and conservation education for citizens.

After assuming office in the Solomon Islands early in 2017, I introduced the project and book to Hon. Prime Minister Manasseh Sogavare, members of Parliament, members of the diplomatic mission, the academic sector, and various communities. To help citizens of the Solomon Islands understand their natural resources, I donated numerous "Field Guide to the Plants of Solomon Islands" books to the Honiara City Library. Our efforts to assist with species conservation in the Solomon Islands have gained reputation everywhere in the country.

I was pleased to hear that following the publication of "Field Guide to the Plants of Solomon Islands," "Sol Amazing: Lycophytes and Ferns of the Solomon Islands" will soon be published under joint efforts of plant experts from Taiwan, Solomon Islands, and New Zealand. The new book will introduce the rich variety of ferns in the Solomon Islands, including several fern species that were discovered for the first time in the Solomon Islands, making them even more precious. Publication of the new book will educate students and citizens of the Solomon Islands about local fern resources. The new book will also greatly contribute to academic research, and is a testament to the fruitful results yielded by the collaboration project.

Ambassador of the Republic of China (Taiwan) to the Solomon Islands

Roger Luo

2017.6.23

A handwritten signature in black ink, appearing to read 'Roger Luo', written in a cursive style.

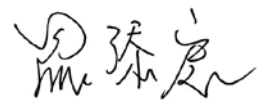
中華民國基於臺索兩國多年友好邦誼，長期協助索國政府發展農業、醫療、公共衛生、教育、觀光、偏鄉建設等各領域，改善偏鄉民眾生活，提升醫療農業等技術能力，獲得索國政府及社會各界的讚許，咸認我國係索國真誠友邦。

復鑒於索國遭全球溫室效應威脅，亟需投入物種保育，以維護並保存其豐富多樣之生態環境。我國於 2012 年起與索國合作執行「索羅門群島資源植物調查與植物誌編纂計畫」，已在索國捐贈建置乙座最大、保存植物物種最完整的溫室，並派遣逾百人次的專家團至索羅門進行植物採集與調查作業，以及協助培育當地物種採集專業人員，及出版「索羅門群島植物圖鑑」專書，對協助索國植物在境外保種、保存標本，及維護生物多樣性與教導民眾保育觀念等方面，均甚有助益。

本人於 2017 年初來索國抵任後，曾分別向索國蘇嘉瓦瑞總理 (Manasseh Sogavare) 暨國會議員、外交團成員、學界及社會各界人士，廣為介紹前述計畫及「植物圖鑑」一書，並向荷尼亞拉市立圖書館捐贈「植物圖鑑」多冊，以協助索國民眾瞭解其本國自然資源。駐索羅門大使館也曾數度安排外交團人士參訪「溫室」，並透過索羅門主流媒體及國家廣播公司，多次刊載報導我國協助索國永續保育植物的貢獻，我們協助索國進行的物種保育工作，在索國深獲各界讚揚。

繼「植物圖鑑」出版後，欣聞臺索紐三方植物專家合作近期將再出版索羅門蕨類植物圖鑑 (Sol Amazing: Lycophytes and ferns of the Solomon Islands)。新書將介紹索國多樣豐富的蕨類植物，其中並包含多種首次在索國發現的蕨類物種，彌足珍貴。該書的出版，將可教導索國學生及民眾進一步認識當地蕨類資源，並可對專業學術研究有重要助益，再次彰顯該合作計畫的豐碩成果。

中華民國駐索羅門群島大使



2017.6.23



A workshop introducing the plant diversity of the Solomon Islands held in Solomon Islands National University (SINU).

RECOMMENDATION



This exquisite, comprehensive, and abundantly illustrated guide is a pteridologist's dream, and culminates five years of intensive field work in an under-collected, poorly known (until now), and phytogeographically fascinating part of the fern world. The area covered, the Solomon Islands (including the Santa Cruz Islands), is floristically situated at the nexus of the diverse floras of Malesia (especially New Guinea), Melanesia (including Fiji, New Caledonia), Micronesia, and Australia/New Zealand. This book is not a flora of the region, as it does not treat all known species (estimated to exceed 500); but it does cover more than 300 species, in 33 families, roughly 60% of the known fern and lycophte flora. In addition to an excellent illustrated introduction to fern terminology, and a synoptical treatment of the genera, there is coverage of each species: scientific names and authorities, diagnostic characters, distribution, ecology (habitat, elevation), and taxonomic notes. But the most stunning and useful part of this book for most people will be the copious and generally excellent photographs -- of plant habitat, habit, frond dissection, details of sori, indusia, venation, and even anatomical characters, e.g., petiole cross-section. There are keys to genera but not to species, but with illustrations like this, who needs keys?! The authors are all competent professionals doing research in the field, and in this work have largely adopted the latest classification as a framework for their presentation -- PPG I, from the Pteridophyte Phylogeny Group.

This book joins other recent fern floras in the style of presentation and extensive photographic documentation: Cambodia, Korea, Southern Africa, and Taiwan. With this publication, we might expect that in the not-too-distant future, floristic work will take on a new style -- geared especially toward more rapid identification and education for professionals, amateurs, and all of us with a fern fascination. In this New World, there will exist a photographic library of images of the organisms, which can be digitally accessed and compared morphometrically to specimens seen in the field. Ferntastic!

Alan R. Smith
Research Botanist, Emeritus
University of California, Berkeley
U.S.A.

Alan R. Smith

PREFACE

June 16 2016: we finally arrived in Vanikoro, an island of Temotu Province located nearly 800 kilometres to the southeast of the Solomon Islands' capital city Honiara, in the fifth year of our floristic project. Travelling around the Solomon Islands is not always easy, especially for such a remote and isolated island like Vanikoro. We had spent a few days in Nendo, the largest island of Santa Cruz Islands, trying to find transportation to Vanikoro. After that, we were jumping and bumping for another 6 hours in a small boat with a tiny engine on the rough sea.

Because of its geographic location, Vanikoro has a unique biota among the islands of the Solomon Islands that is more closely related to other Melanesian countries such as Vanuatu and Fiji than it is to other parts of the country. This is also supported by several fern species of the Solomon Islands that are only known in Vanikoro. However, my first sighting of the island was not its rich biodiversity. Instead, it was hundreds of logs of Fijian kauri pine (*Agathis macrophylla*) laid down on the wharf. Fijian kauri pine is also indigenous to Santa Cruz Islands. Although classified as an endangered species on the IUCN red list, it is logged in an unsustainable way through the island (but approved by both the Solomon Islands government and local communities). According to the local operating company, within 3 years the population of Fijian kauri pine will become too low to sustain the operation economically. It is even more shame to me when I hear that most of this timber is bought by Taiwanese people. How can my country send people like me to help the conservation of biodiversity of the Solomon Islands, and on the other hand be an accomplice in the destruction of it?



The story of Vanikoro is not an exception as it happens all around the country. Because the rich natural resources of the Solomon Islands are relatively cheap, foreign enterprises occupy and own the right to use almost all of the valuable natural resources such as minerals, timber, and fisheries. Shamefully and sadly, many of these enterprises are using the resources in a way that only maximizes their own benefit. They lure the local communities with empty promises and short-term money, but eventually leave behind only a destroyed environment for the locals to live with.

In 2016, I had the chance to join a public hearing of an Australian mining company in San Jorge, an island rich in bauxite. The company's representative was trying to convince the local people how the company would provide a better life, including electricity and water systems, and, most importantly, more money. But what he did not say was how this highly polluting operation would affect the environment in ways that could not be repaired with money, even long after the company had left. As that representative said, the local people must "*tintin big*" (think big). I hope by means of education, Solomon Islanders can think really big and understand the true value of biodiversity and learn how to use it in a sustainable way as their ancestors used to do. With this book, I deeply wish that I not only show the beauty of lycophyte and fern diversity of the Solomon Islands but also, and more importantly, encourage conservation in the country. Only with that will the Solomon Islands always be the "*Hapi iles*".

陳正偉
Cheng-wei Chen



ACKNOWLEDGEMENTS

This project was initiated and carried out by the team at Taiwan National Museum of Natural Science. Special thanks to Tsung-Yu Aleck Yang and Hsiu-Chun Huang for their administrative assistance. Financial supports from Taiwan International Cooperation and Development Fund (ICDF) and Dr. Cecilia Koo Botanic Conservation Center (KBCC) for field works and equipments are also deeply acknowledged.

Generous supports are provided by many people and organizations in the Solomon Islands and the following persons require special mention: Sheun-Pyng Shiue, Ho-Chang Cheng, and Li-Chu Chien of Taiwan Technical Mission (TTM), Yu-Chau Lin of Kaohsiung Medical University Hospital, Tsung-Hsien Lo of Kolombangara Forestry Product Limited (KFPL), Chia-Hong Wei of Taisen International Enterprise Ltd., Fred Pitisopa, Myknee Sirikolo, and Peter Kosui of the Solomon Islands Ministry of Forestry & Research.

We are grateful for the constant company of Tian-Chuan Hsu and Moffat Farnerii during the field work. Together we enjoyed many tough and fruitful trips all around the country. The field work would not have been possible without the help of various landowners and communities. We thank them for kindly providing the access permission and assistance during our expeditions. *Bigfala tenkiu tumus lo iufala everiwan.*



We thank several botanists who provided valuable taxonomic assistance on various groups: Alan Smith (Thelypteridaceae), Ashley Field (Lycopodiaceae), Atsushi Ebihara (Hymenophyllaceae), Barbara Parris (grammitids), Ho-Ming Chang (Lycopodiaceae and Selaginellaceae), Joel Nitta (Hymenophyllaceae), John Thomson (*Pteridium*), Marcus Lehnert (Cyatheaceae and Dicksoniaceae), Peter Hovenkamp (Nephrolepidaceae), Samuli Lehtonen (Lindsaeaceae), Shi-Yong Dong (bird's nest ferns and Tectariaceae), and Thien Tam Luong (Saccolomataceae). We also thank Michael Hassler for sharing the data for ferns in Papua New Guinea. Two reviewers, Barbara Parris and Ralf Knapp, provided invaluable feedback which is deeply appreciated.

Assistance and permissions were also provided by the curators and staff of the following herbaria: BISH, BO, BSIP, K, NSW, TAIF, TNM, WELT, and USP. We especially thank Barbara Kennedy of Bishop Museum, Matt Renner of National Herbarium of New South Wales, Wita Wardani of Herbarium Bogoriense, and Ruei-Fen Pan, Te-Yen Tang, and Zi-Cheng Du of Taiwan Forestry Research Institute for their kind help.

Lastly, the first author would like to thank his family, especially his mother Su-Ching Cheng who taught him to appreciate and respect nature, his cousin Tzu-Yuan Lin who inspired his interest in ferns, and his wife Viet Dai Dang who always gives him the warmest support.





Cheng-Wei introducing the project, Boro village, Vella Lavella, Western Province (photographed by T.-C. Hsu).

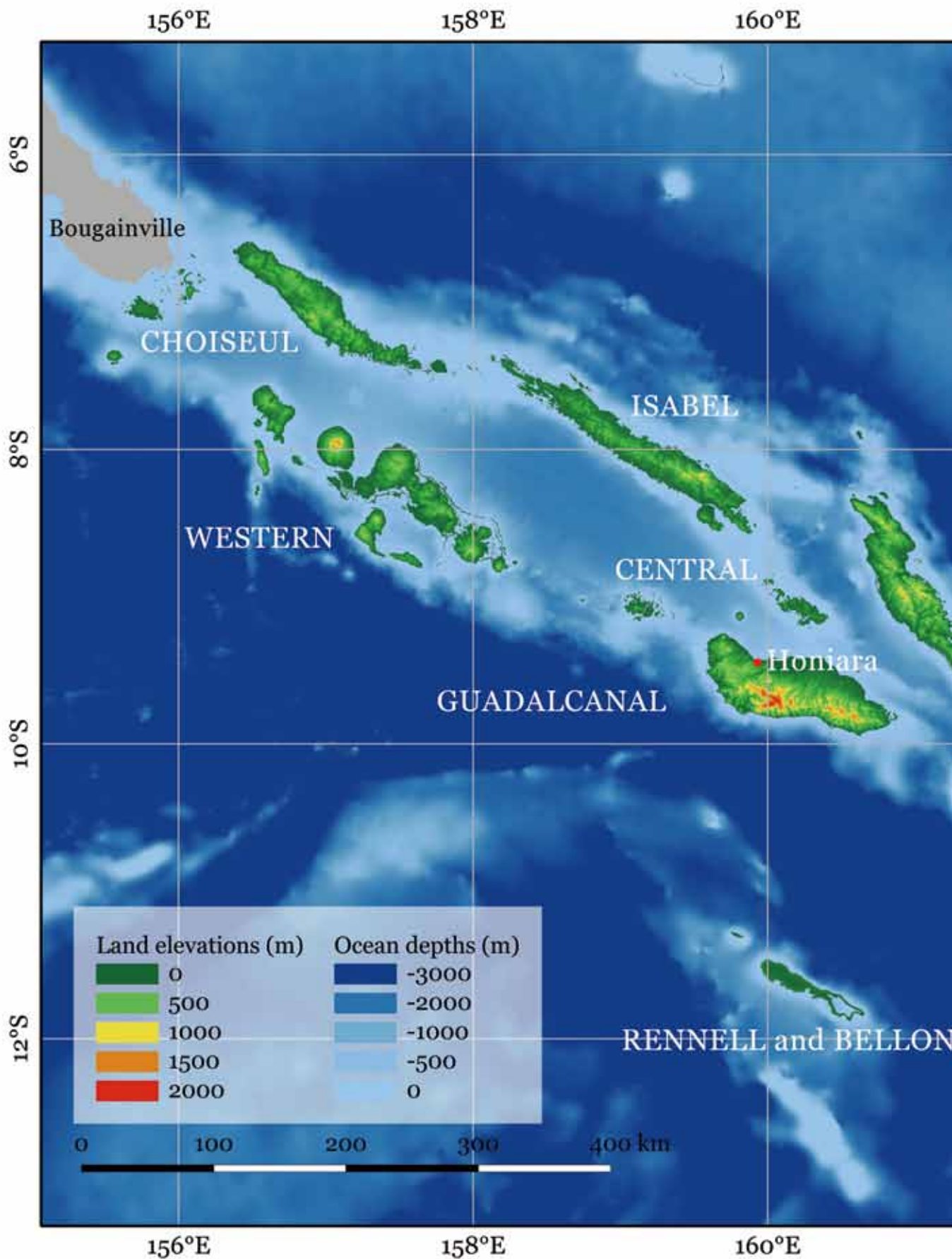
INTRODUCTION

This book is one of the outputs of the “Census and Classification of Plant Resources in the Solomon Islands” project (<http://siflora.nmns.edu.tw/>), which is a collaboration of the Solomon Islands and Taiwan. This project aims to bring awareness to the people of the Solomon Islands of their abundant plant resources but also to facilitate the making of conservation plans.

Lycophytes and ferns are two lineages of extant vascular plants including ca. 13,000 species globally. Although a modern flora is lacking for the Solomon Islands, it is estimated these two lineages together represent over 10% of the country's species of vascular plants. During our expeditions from 2012 to 2016, materials of over 10,000 specimen sheets, representing over 400 species, of lycophytes and ferns were collected. Here we have selected and illustrated 370 species as a summary of the diversity of the lycophytes and ferns of the Solomon Islands. Out of those, 51 species are newly recorded for the country and 23 species are unidentified and could be new to science. Specimen vouchers are deposited in the herbaria BSIP, TNM, and TAIF; collection number (SITW#) is provided for each photo.

This book is not a Flora and does not include all the species known from the country. Instead, we show the spectacular lycophyte and fern diversity of the country with over 1,500 photographs with accompanying information on etymology, diagnostic characters, distribution, ecology, and taxonomic notes for each species. We hope this book will be satisfying for both scientists and a broader audience with an interest in nature.





162°E

164°E

166°E

Area covered by this book

The area covered by this book is that of the Solomon Islands in the political sense, including the Santa Cruz Islands (Temotu Province) which are biogeographically part of Vanuatu. Bougainville (a province of Papua New Guinea) is excluded although biogeographically it is the northernmost island of the Solomon Islands archipelago.

MALAITA

MAKIRA-ULAWA

TEMOTU

6°S

8°S

10°S

12°S

162°E

164°E

166°E

Geography and climate of the Solomon Islands

The Solomon Islands is a double archipelago lying between the Indo-Australian and Pacific plates. The island arc has formed since the late Cretaceous in an entirely oceanic environment with land appearing since the late Miocene (Pettersen & al., 1999). Consisting of 992 islands (including six main islands: New Georgia, Choiseul, Santa Isabel, Guadalcanal, Malaita, and Makira), the country lies between latitudes 7°S and 12°S, and longitudes 155°E and 167°E. The total land area is 28,896 km², with the highest peak being Mt. Popomanaseu in Guadalcanal (2,332 m above sea level).

The climate in the Solomon Islands is described as continuously wet with a mean annual rainfall of 3,000–5,000 mm (Whitmore, 1969). The mean annual rainfall on north Guadalcanal is only 2,000 mm due to a rain shadow effect of the central mountains, but the mountain inlands from the south coast have



a correspondingly higher rainfall (up to 9,000 mm). Mean daily temperatures at sea level in the Solomon Islands average 25–26° C, and monthly temperatures are highly uniform with only about 1° C of variation among the monthly means. Daily temperature range is only 7° C on average, varying from 32° C in the early afternoon down to 22° C at night. Temperatures decrease with altitude at a rate of 0.6–1.0° C per 100 m, so that the summit of Mt. Popomanaseu, for instance, will have monthly means of close to 0° C.

Distribution of lycophytes and ferns in the Solomon Islands

Lycophytes and ferns can be found in almost every habitat from the high montane forests to the coast. The following is a brief overview of the characteristics of each habitat and the corresponding common groups or species.





Montane mossy forest near the summit of Mt. Veve, Kolombangara, Western Province.



Montane forests have a low and open canopy so that more light reaches the ground. They are cool and have constantly humid conditions. Bryophytes and lichens are more abundant as well as epiphytic ferns such as Hymenophyllaceae and grammitids. Ridges and gullies have very different species, and slopes between the two habitats have a mixture of species from these two habitat types. On ridges, light levels are high as trees are shorter and often less dense. Moisture conditions vary between very damp, cold conditions and warm, dry, and windy conditions. Some common species of ridges in montane forests include *Dicksonia sciurus*, *Alsophila hornei*, and *Dipteris conjugata*. In gullies the light levels tend to be low and moisture conditions constantly damp. Some species usually found in gullies include *Leptopteris laxa* and *Pteris wernerii*. Several species have only been found near the summit area of Mt. Popomanaseu such as *Lycopodium clavatum*, *Gleichenia vulcanica*, *Sticherus brassii*, and *Plagiogyria tuberculata*. Overall, higher species diversity of lycophytes and ferns occurs in montane forests, among both epiphytic and terrestrial species.



Lowland forest at Malaita, Malaita Province.



Lowland forests are characterized by a tall canopy and a dense understory of shrubs and climbers, filtering most of the sunlight before it reaches the ground. Because of the low light at ground level, epiphytes are often abundant. *Angiopteris microua*, *Asplenium australasicum*, and *Crepidomanes aphlebioides* are some of the common species of lowland forests. In more exposed places like forest margins and ridges, light demanding species such as *Selaginella rechingeri*, *Dicranopteris linearis* var. *linearis*, and *Sphaerostephanos unitus* var. *mucronatus* are most commonly found.



River gorge at upper Lunga River, Guadalcanal, Guadalcanal Province.



Riverbeds and river margins have a distinctive group of species. River gorge habitat is most common in Guadalcanal, with wide and open riverbeds covered with gravel. *Plesioneuron attenuatum* is often the dominant species of gorge walls, pendent from vertical cliffs. *Equisetum ramosissimum* subsp. *debile* has been only recorded growing on sandy riverbeds of wide gorges in Guadalcanal. *Chingia malodora* and *Diplazium proliferum* usually occupy shaded river margins with fertile, well drained, sandy soils. Differing from the above two habitats, open gravel riverbeds provide no shade and soils but frequent flooding that renews the ground surface. Ferns of this habitat must be able to reestablish fast after floods, and include *Sphaerostephanos doodioides*, *Osmolindsaea minor*, and *Odontosoria retusa*.



Disturbed forest margin after logging, Vanikoro, Temotu Province.



Disturbed open places such as gardens, road verges, and forest margins are important habitats for many species. High light conditions and frequent disturbance favor quick growing herbaceous plants. Many species do well in such situations, such as *Palhinhaea cernua*, *Christella harveyi* var. *harveyi*, *Blechnum orientale*, *Stenochlaena palustris*, *Pteris vittata*, and *Nephrolepis brownii*.



Coastal zone and mangrove forests at Tetepare, Western Province.



Coastal zone and mangrove forests are characterized by strong sun light. The most common epiphytic ferns of the habitat are *Davallia solida*, *Microsorium scolopendria*, *Pyrrosia longifolia*, and *Pyrrosia lanceolata*, which are all light demanding and desiccation-tolerating species. On the slopes and rocks, *Acrostichum speciosum*, *Lindsaea ensifolia*, *Cheilanthes tenuifolia*, and *Selaginella nana* are sometimes found.



Ultrabasic land at San Jorge, Isabel Province.



Ultrabasic lands are rich in iron and magnesium minerals, with little or no silica. This is a special habitat for plants and is only found in a few areas of Choiseul, Isabel, Guadalcanal, and Central Provinces in the Solomon Islands. Some fern species are only recorded in ultrabasic lands such as *Adiantum monosorum*, *Lindsaea gueriniana*, and *Odontosoria deltoidea*.



Grassland near Mt. Austin, Guadalcanal, Guadalcanal Province.



Grasslands occupy large areas on the north coast of Guadalcanal due to the relatively dry environment caused by the rain shadow effect of the central mountains. *Palhinhaea cernua*, *Lindsaea agatii*, *Lindsaea ensifolia*, *Cheilanthes tenuifolia*, and *Ophioglossum nudicaule* are some of the common species found here.

A brief history of the study of lycophytes and ferns in the Solomon Islands

As in most Pacific Islands, the initial scientific collecting of plants in the Solomon Islands can be traced to European expeditions in the late 18th century. Although lycophytes and ferns were generally less collected than flowering plants, none of the botanists visiting the Solomon Islands left without being impressed by its rich lycophyte and fern diversity. “I may here state that ferns abound everywhere; in moist and dry situations; in sheltered and exposed districts; now decking the tree-trunks with their draperies or concealing the unsightliness of the decaying log; here covering the bare slopes of some lofty hill-top, or clothing the surface of some treeless tract.” said by Guppy (1887) in his well-known book “The Solomon Islands and their natives”. The English missionary Rev. R. B. Comins collected 60 fern specimens and sent them to the British pteridologist, Baker, who published the first fern list for the Solomon Islands (1882).

In the early to mid-20th century, many botanical expeditions contributed to our understanding of this country’s flora. Among these, three of the most important collectors of lycophytes and ferns were S. Frank Kajewski, Leonard John Brass, and A. F. Braithwaite. During 1928 to 1933, Kajewski and Brass collected on most of the main islands for the Arnold Arboretum and Bishop Museum and 28 new species were published from their collections (Copeland, 1931; 1936; Kajewski, 1946). In 1965, A. F. Braithwaite collected 544 lycophyte and fern specimens from Guadalcanal, Makira, Isabel, and Kolombangara during the Royal Society Expedition.

A comprehensive checklist of vascular plants in the Solomon Islands was not available until Henderson & Hancock (1988), in which they listed 331 species of lycophytes and ferns incorporating all the previous specimens and publications, including their own collections (233 lycophyte and fern specimens) made during 1962 to 1964. More recently, David Glenny collected 744 specimens of lycophytes and ferns during 1990 to 1992. This is currently the second largest collection of lycophytes and ferns for the Solomon Islands and raised the species number to 432 (Glenny, unpublished). Since 2012, the first author and his colleagues have collected lycophytes and ferns for the project “Census and Classification of Plant Resources in the Solomon Islands”. Based on our unpublished data, over 500 species are present in the Solomon Islands and a complete checklist will be published after the project is finished.





Solomon Islands National Herbarium, Honiara

MORPHOLOGY OF LYCOPHYTES AND FERNS

Lycophytes and ferns differ in structure from flowering plants, and some special terms are necessary to describe them. These terms usually correspond to important features that need to be observed to make an identification. For the definition of the terms, we mainly follow Lellinger (2002).

1. Habit

Most lycophytes and ferns are constant in their habitat preference and growth habit: they are either terrestrial (rooted in soil), epiphytic (growing on a tree) or rupestral (growing on rock). Some species are climbing in being rooted in the ground but with their fronds/stems climbing nearby plants. Species that are usually terrestrial may be found as epiphytes, especially in damp cool habitats, and those that are usually epiphytes may be found amongst tree roots where they appear terrestrial, especially in montane mossy forests.



Terrestrial habit



Epiphytic habit



Rupestral habit



Climbing habit

2. Rhizome

The main stem of ferns is called a rhizome. The rhizome may lie on the surface of the substrate (creeping), or be erect and sometimes forming a trunk. The spacing of fronds along a rhizome and the appearance of the rhizome are some of the key characters for ferns. The term long creeping is used to describe those species with fronds that are well-spaced along their rhizome. If the fronds are close together then it is called short creeping. When the fronds are tufted at the rhizome tip, it is called ascending. If the rhizome is erect and large enough, it may be termed a caudex or a trunk. The rhizome can be several metres tall in some tree ferns.



Erect rhizome



Ascending rhizome



Short creeping rhizome



Long creeping rhizome



Rhizome forming a trunk

3. Fronds of ferns

The frond is the equivalent of the leaf in flowering plants. The stipe is the stalk between lamina and rhizome. The lamina is the leafy part of the frond. Fronds that are not dissected at all are termed simple and those with some dissection are termed compound. Fronds that divide into two equal parts are said to divide dichotomously; if a dormant bud is present at the fork they are then called pseudodichotomous. Fronds with a main axis (the rachis) and smaller side branches are termed pinnate, and the side branches called pinnae. If the pinnae are not fully separate from the rachis, the frond is called pinnatifid.



Simple frond



Compound frond



Pseudodichotomous division



Dichotomous division

The pinnae may be toothed or lobed, but if the lobes appear as separate segments attached to the pinnae rachis by only a stalk (i.e., they are free), then the frond is 2-pinnate. The free segments are pinnules and if these pinnules are further divided then frond is called 3-pinnate or 4-pinnate. Higher levels of division are uncommon. For 3-pinnate and 4-pinnate fronds, the last free segments are called ultimate segments.



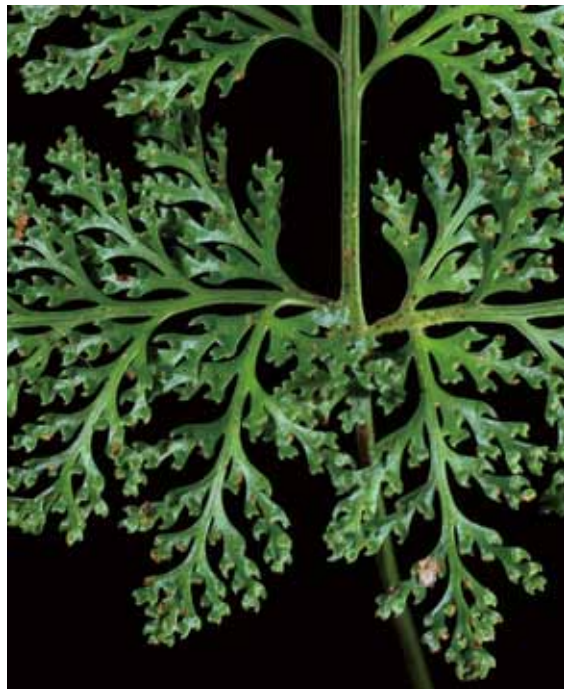
Pinnatifid frond



Pinnate frond



2-pinnate frond



3-pinnate-pinnatifid frond

The central axis in a frond is the stipe (below the lamina) and rachis (inside the lamina). The corresponding terms for pinnae and pinnules are costa and costule, respectively. The midvein or midrib can also be used to describe the central vein of a laminal segment or a lobe. A small leafy lobe at the branching points along the rachis of some ferns such as *Dicranopteris* or *Histiopteris* is called a stipule.



Frond axes

Pinnae or pinnules are free if the lamina narrows down to the midrib where they attach to their axis (the rachis or costa). If the lamina also joins to the axis, the pinna or pinnule is adnate. If the segments are free, they may be petiolate if on a distinct stalk, or sessile if no stalk is present.



Adnate pinnae



Sessile pinnae



Petiolate pinnae



Stipules

4. Leaves of lycophytes

Fertile leaves in lycophytes are called sporophylls and are usually smaller and differ in shape from the sterile leaves. Leaves of lycophytes are characteristically either arranged around the stems evenly in all directions (radially arranged) or lie in one plane to form a flattened pseudofrond such as those of *Selaginella*. For most of the species of *Selaginella*, the leaves are differentiated into lateral and median leaves. Leaves spreading from the stem are termed squarrose, whereas those that lie against the stem are appressed. The same terms also apply to rhizome scales.



Sporophylls



Pseudofronds



Radially arranged leaves



lateral and median leaves



Squarrose leaves



Appressed leaves

5. Venation

If the veins in a frond or segment divide, but never meet, they are termed free. If they rejoin, they are termed reticulate. In some ferns, the joined veins form a net, but in others, they may be mostly free, with only a few joining. Where veins rejoin, they enclose an area of tissue between the veins and that area is termed an areole. The small vein in the areole is called an included veinlet. In most ferns, the main vein of a laminal segment runs along the center of the segment. However, in a few cases, especially species of *Lindsaea* and *Adiantum*, they run along the basioscopic margin. In this case the laminal segments are termed dimidiate.



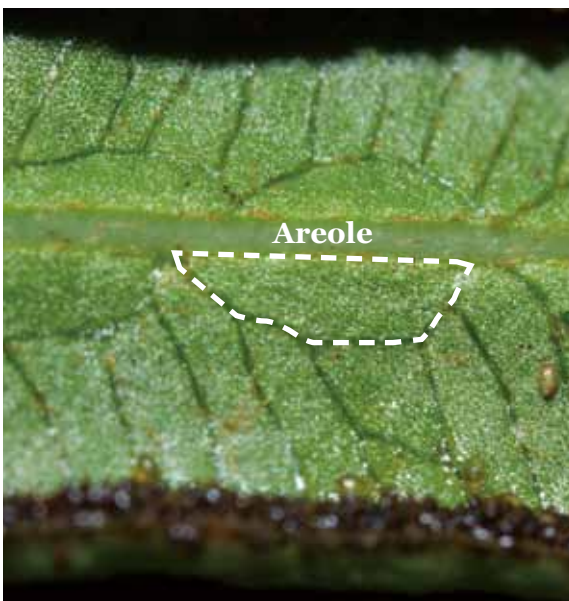
Free venation



Reticulate venation without included veinlet



Reticulate venation with included veinlets



Areoles



Dimidiate pinnae

6. Shapes of apex and base

The angle that the margin makes at the apex or base of a frond or segment is described as acute if less than 90° , or obtuse if greater than 90° . Cuneate is the corresponding term used for an acute base. An obtuse base with shallow lobes is cordate, and if distinct lobes are present at the base, then it is auriculate. An apex that abruptly changes width to a long narrow apex is acuminate. Tapering means narrowing evenly to an elongated apex. A squared off apex or base is truncate.



Acute



Cuneate



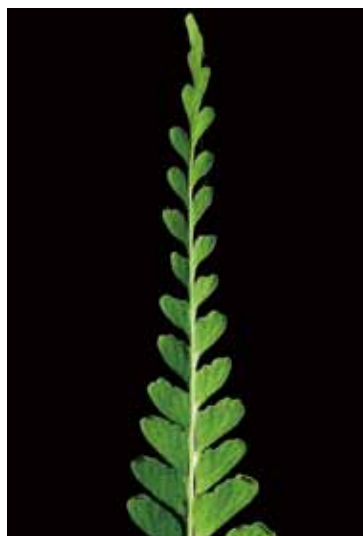
Cordate



Auriculate



Acuminate



Tapering



Truncate

7. Margins

The frond or segment margin is termed entire or untoothed if it is straight. Large rounded projections are called lobes. The space between deeply incised lobes is called the sinus. In lobed species of Thelypteridaceae, a transparent white line below the sinus is called the sinus membrane. An undulate margin is entire, but is crisped or folded along the margin. It is most commonly seen in Hymenophyllaceae (filmy fern).



Entire margin



Toothed margin



Undulate margin



Lobes and sinus

8. Positions on frond/leaf

The upper and lower surfaces of a frond/leaf are called adaxial and abaxial, respectively. The top (furthest from the rhizome) of the frond/leaf is the apex, the bottom is the base. The last pinna (furthest from the rhizome) on the frond is the terminal pinna. In most ferns, the pinnae at the frond apex become progressively smaller. However, in some fronds the terminal pinna is about the same size as the lateral pinnae below it. It is then termed conformal. Terms that describe whether a pinna faces the apex or base are acroscopic and basioscopic, respectively.



Conform terminal pinna



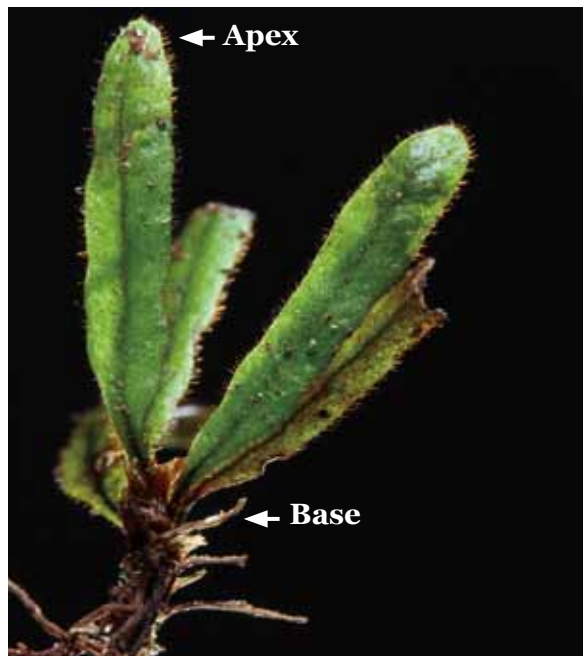
Adaxial surface



Abaxial surface



Acroscopic and basioscopic



Apex and base

9. Appendages

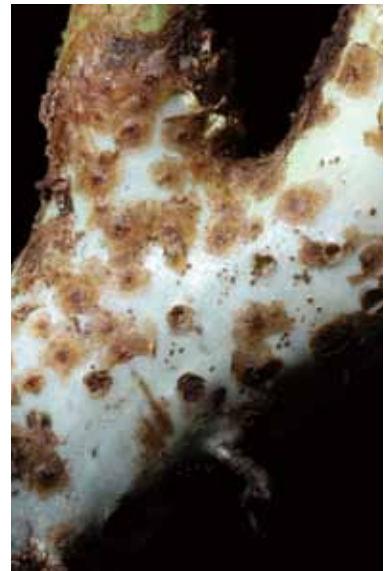
Scales are flattened plates of cells attached to the rhizome, stipe or rachis or on the lamina surface; their function is to protect the frond or rhizome when they are young and soft. They are usually flat, but are sometimes raised in the center (bullate). Their margins may be entire, or if cell walls project, setose. They may be attached at their base, or in their middle in which case they are peltate. Hairs are thinner than scales and usually project more from the surface. Their function may be to trap still air or to hold or shed water. They are only one cell wide and often several cells long. Hairs that have radiating branches are stellate. Glands are surface organs that excrete a substance like wax or mucous.



Scales



Bullate scales



Peltate scales



Hairs



Stellate hairs



Glands

Glandular hairs are hairs that secrete something from an expanded tip. Hydathodes are water secreting glands, usually along the lamina margin. Aerenchyma (or pneumatophores) are air breathing vents, round, elongate, or finger-to hook-like projections on the stipe or pinna base of a frond, usually visible by their paler color.



Hydathodes



Glandular hairs



Aerenchyma

10. Sorus and strobilus

A sorus (*pl.* sori) is the aggregation of sporangia on the lamina surface of ferns, usually on the underside (abaxial) of their fronds. Its position and shape is of key importance for classification as it is usually constant for a species, genus or even family. The term discrete is used to describe those sori appearing as separated spots on the lamina. If the sori are long and usually following veins or the lamina margin, they are called elongated. When the sporangia cover the whole abaxial surface of the lamina, it is called acrostichoid.



Sori discrete



Sori elongated



Sori acrostichoid

In lycophytes, the sporophylls are the fertile leaves bearing the sporangia. In some genera they are aggregated into a cone on the end of a branch termed strobilus (*pl.* strobili). In some ferns, for example, Ophioglossaceae, the sporangia are held above the rest of the lamina on a spike termed a sporophore, whereas the sterile portion of the lamina is termed a trophophore.



Strobilus



Sporophore and trophophore

11. Indusium

The indusium (*pl.* indusia) is a flap of protective tissue covering a sorus. It is usually thin, and may disappear or shrivel up after the sporangia open to release the spores. Two common shapes of indusia are peltate where they are attached by a central stalk and reniform where they are attached at one side. If attached at the sides as well as the base, an indusium may form a pocket.



Peltate indusia



Reniform indusia



Pocket-shaped indusia

Filmy ferns have a distinct type of indusium sometimes also called an involucre; it is on the end of a lamina segment rather than on the surface of the lamina and the indusium is either a tube or a pair of valves (bivalves). Many ferns have no indusium and thus the sori are called exindusiate. When the sorus is marginal, the sporangia are often protected by the folded-over lamina margin, this being termed a pseudo-indusium.



Involucre bivalvate



Involucre tubular



Sori exindusiate



Pseudo-indusia

12. Sporangium and spore

The sporangium (*pl.* sporangia) is a stalked sac in which the spores develop. Many ferns have an annulus which is a band of thickened cells around the sporangium that forces the sporangium to open at maturity by contracting on its outside face. In some of the ferns such as Psilotaceae and Marattiaceae, a group of sporangia are fused into one synangium (*pl.* synangia). In *Equisetum*, the sporangia are borne on stalked, peltate sporangiophores arranged in compact terminal strobili.



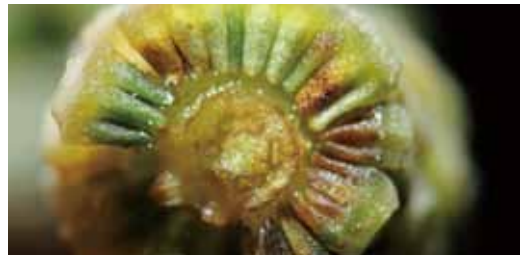
Sporangia



Synangia of Marattiaceae

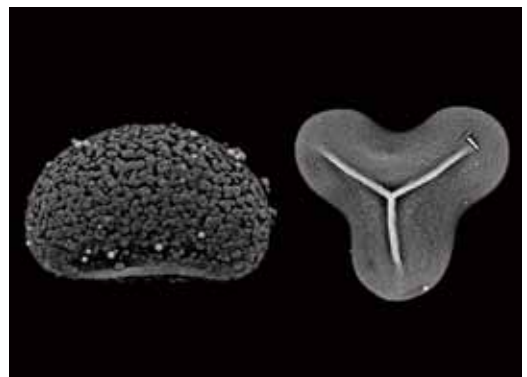


Synangia of Psilotaceae



Sporangiophores of *Equisetum*

Spores are the tiny one-celled propagules of lycophytes and ferns that disperse to form new plants. They develop inside the sporangium until ready to be released. Their shape is characteristic, often at family level. The reniform (bean-shaped) spore with a single linear scar is called monolete. The tetrahedron spore with three scars is called trilete.



Monolete (left) and trilete (right) spores

SYNOPSIS OF LYCOPHYTES AND FERNS OF THE SOLOMON ISLANDS

During the past two decades, as in other branches of the tree of life, the taxonomic system of lycophytes and ferns has been largely changed because of the accumulation of large amounts of new information, especially molecular data. Here we mainly follow the system of the Pteridophyte Phylogeny Group I (2016) except for Blechnaceae (see explanation there). Families are arranged phylogenetically. Genera that occur in the Solomon Islands but are not introduced in this book are indicated with an asterisk (*).

Lycophytes

01. Lycopodiaceae

- * *Huperzia*
- * *Lycopodium*
- Palhinhaea*

Phlegmariurus

Pseudodiphasium

02. Selaginellaceae

Selaginella

Ferns

03. Equisetaceae

Equisetum

04. Psilotaceae

Psilotum
Tmesipteris

05. Ophioglossaceae

Helminthostachys
Ophioderma
Ophioglossum

06. Marattiaceae

Angiopteris
Christensenia
Ptisana

07. Osmundaceae

Leptopteris

08. Hymenophyllaceae

Abrodictyum
Callistopteris
Cephalomanes
Crepidomanes
Didymoglossum
Hymenophyllum
Vandenboschia

09. Dipteridaceae

Dipteris

10. Gleicheniaceae

Dicranopteris
Diplopterygium

* *Gleichenia*

Sticherus

11. Lygodiaceae

Lygodium

12. Schizaeaceae

Actinostachys
Schizaea

13. Plagiogyriaceae

* *Plagiogyria*

14. Dicksoniaceae

Calochlaena
Dicksonia

15. Cyatheaceae

Alsophila
Cyathea
Sphaeropteris

16. Saccolomataceae

Saccoloma

17. Cystodiaceae

Cystodium

18. Lindsaeaceae

Lindsaea
Odontosoria
Osmolindsaea
Tapeinidium

19. Pteridaceae

Acrostichum
Adiantum

- Antrophyum*
Austrogramme
Ceratopteris
Cheilanthes
Coniogramme
Haplopteris
Pityrogramma
Pteris
Syngramma
Taenitis
Vaginularia
- 20. Dennstaedtiaceae**
Dennstaedtia
Histiopteris
Hypolepis
Microlepis
Pteridium
- 21. Diplaziopsidaceae**
Diplaziopsis
- 22. Aspleniaceae**
Asplenium
Hymenasplenium
- 23. Blechnaceae**
Blechnum
Stenochlaena
- 24. Athyriaceae**
Deparia
Diplazium
- 25. Thelypteridaceae**
Amblovenatum
Chingia
Christella
Coryphopteris
 * *Cyclosorus*
Macrothelypteris
 * *Parathelypteris*
Plesioneuron
Pneumatopteris
Pronephrium
Sphaerostephanos
- 26. Didymochlaenaceae**
Didymochlaena
- 27. Hypodematiaceae**
Leucostegia
- 28. Dryopteridaceae**
Bolbitis
Ctenitis
Dryopteris
Elaphoglossum
Lomagramma
Pleocnemia
Polystichum
Teratophyllum
- 29. Nephrolepidaceae**
Nephrolepis
- 30. Lomariopsidaceae**
Cyclopeltis
Dryopolystichum
Lomariopsis
- 31. Tectariaceae**
Arthropteris
Tectaria
- 32. Oleandraceae**
Oleandra
- 33. Davalliaceae**
Davallia
- 34. Polypodiaceae**
Acrosorus
Aglaomorpha
Calymmodon
Chrysogrammitis
Ctenopterella
Goniophlebium
Lecanopteris
Lemmaphyllum
Lepisorus
Leptochilus
Loxogramme
Microsorium
Oreogrammitis
Prosaptia
Pyrrosia
Radiogrammitis
Scleroglossum
Selliguea
Themelium
Tomophyllum

LYCOPODIACEAE

Lycophytes are an early diverging group of vascular plants with a fossil record extending over 420 million years (Rickards, 2000). Among the three extant families of lycophytes, the members of Lycopodiaceae represent the most diverse living forms including semi-aquatics, vines, terrestrials, and epiphytes. The classification of the family has been controversial, ranging from 2 to 16 genera. A deep divergence between the two main groups of the family has been shown by molecular phylogenetic study (Field & al., 2016).

Sixteen genera with ca. 388 species worldwide; 5 genera and ca. 19 species in the Solomon Islands, 14 of which are listed here.

Plants terrestrial or epiphytic; **stems** creeping, pendulous, climbing, or short erect, dichotomously branched; **leaves** small, scale-like, radially or spirally arranged on the stems or less commonly in 2 ranks; **sporangia** reniform, solitary in axils of sporophylls, sporophylls restricted to distinct or indistinct fertile part, or aggregated into strobili; **spores** trilete, globose, homosporous.

Key to genera

- 1a. Dichotomously branched stems of equal length..... *Phlegmariurus*
 b. Dichotomously branched stems of unequal length..... 2
 2a. Strobili pendent and sessile, each on terminal branch..... *Palhinhaea*
 b. Strobili borne on branch system..... *Pseudodiphasium*

PALHINHAEA FRANCO & VASC.

Etymology: named after the Portuguese botanist Ruy Telles Palhinha.

Description: terrestrial; stems creeping and rooting at intervals with aerial branches erect and branched; leaves subulate to linear, arranged radially on the stem; sporophylls aggregated into strobili that are terminal on branches, strobili sessile and pendent.



PHLEGMARIURUS HOLUB

Etymology: *phlegma* = a name based on the epithet of *Lycopodium phlegmaria* L.; *oura* = tail; referring to the tassle-like strobili of most species of the genus.

Description: epiphytic and pendent; main stems forking repeatedly; leaves radially arranged or rarely in 2 ranks, linear or ovate; sporophylls restricted to ends of stems, similar or much smaller to the sterile leaves; sporangia in the axils of sporophylls.



PSEUDODIPHASIUM HOLUB

Etymology: *pseudo* = false; *Diphasium* = a lycophyte genus; referring to the resemblance to *Diphasium*.

Description: terrestrial; main stems creeping or climbing; leaves narrowly triangular, arranged radially on the stem, or in 2 ranks; strobili erect or pendent, at the ends of elongated stalks, sporophylls unlike the sterile leaves, narrowly ovate.





Habitat (lowland form, SITW11025)



Strobili (lowland form, SITW03454)



Plant (montane form, SITW10578)



Strobili (montane form, SITW10578)

***Palhinhaea cernua* (L.) Vasc. & Franco**

Etymology: *cernua* = slightly drooping; referring to the pendent strobili.

Diagnostic characters: the sessile and pendent strobili make this a very distinct species.

Distribution: globally widespread in the tropics and subtropics; type from India.

Ecology: the most common terrestrial species of the family, growing in open grounds and forest clearings at altitudes of 0–2,100 m.

Note: two forms present in the Solomon Islands: montane plants have much thicker stems (ca. 10 mm in diameter) and are larger plants with a climbing habit, whereas lowland plants are slender (ca. 3 mm in diameter) and often grow without support.



Habitat (SITW04657)

***Phlegmariurus carinatus* (Desv. ex Poir.) Ching**

Etymology: *carinatus* = keeled; referring to the shape of the leaves.

Diagnostic characters: a stiff, sparsely branched species with thick leaves and the sporophylls more or less differentiated from the sterile ones.

Distribution: Asia, Malesia, Australia, and the Pacific Islands; type from Sri Lanka.

Ecology: a common lowland species usually found in coastal forests below 600 m.



Plant (SITWo4657)



Cross section of stem base (SITWo6875)



Cross section of fertile part (SITWo6875)



Stem base (SITWo6875)



Sporophylls (SITWo6875)



Sterile leaves (SITWo6875)



Plant (SITW13013, photographed by T.-C. Hsu)



Fertile stems (SITW13013, photographed by T.-C. Hsu)

***Phlegmariurus dalhousieanus* (Spring) A.R.Field & Bostock**

Etymology: named after the Scottish botanist Christian Ramsay, Countess of Dalhousie, who collected the type.

Diagnostic characters: a very distinct species with bluish and much larger leaves (over 3 cm long) than any other *Phlegmariurus* species in the Solomon Islands.

Distribution: Australia, Malesia (peninsular Malaysia, Borneo, and Moluccas), the Solomon Islands, and Fiji; type from Penang.

Ecology: a rare lowland species usually found on very tall trees.



Stem apex (SITW 11596)



Strobilus (SITW13013, photographed by T.-C. Hsu)



Sterile leaves (SITW 11596)



Plant (SITWo4926)



Stem base (SITWo7587)



Sterile leaves (SITW11647)



Strobili (SITWo7587)

***Phlegmariurus filicaulon* (Copel.) A.R.Field & Testo**

Etymology: *fili* = thread-like; *caulon* = stem; referring to the narrow stem.

Diagnostic characters: sharing the character of strongly dimorphic fertile and sterile parts with *P. phlegmaria*, but can be distinguished by the very narrow sterile leaves.

Distribution: Papua New Guinea and the Solomon Islands (type locality).

Ecology: an uncommon epiphyte found in montane forests at altitudes of 300–1,500 m.



Plant (SITWo4961)



Stem base (SITWo7586)



Sterile leaves (SITWo7586)



Cross section of stem (SITWo6872)

***Phlegmariurus harmsii* (Nessel) A.R.Field & Bostock**

Etymology: named after the German botanist Hermann August Theodor Harms.

Diagnostic characters: closest to *P. phlegmaria* but has thicker stems (1.5–4 mm, not 1.0 mm), and the leaves are more imbricate on the basal part of the stem so that the stem is mostly covered by the leaves.

Distribution: Malesia and the Pacific Islands; type from the Caroline Islands.

Ecology: this is one of the most common of the *Phlegmariurus* species found in both lowland and montane forests at altitudes of 0–1,200 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW04039)



Stem apex (SITW11144)



Stem base (SITW11144)



Sporophylls and sporangia (SITW11144)

***Phlegmariurus ignambiensis* (Compton) A.R.Field & Testo**

Etymology: from Ignambi in New Caledonia, where the type was collected.

Diagnostic characters: a distinct species with very narrow and soft leaves (ca. 1 mm wide) and the fertile region is similar to the sterile region.

Distribution: New Caledonia (type locality) and the Solomon Islands.

Ecology: an uncommon species found in montane forests at altitude of 100–800 m.

Note: this species was misidentified in the past as *P. verticillatus* (L.f.) A.R.Field & Testo, a species of Reunion (Henderson & Hancock, 1988).



Plant (SITW11012)



Stem bases (SITW11012)



Cross section of stem (SITW11012)



Strobili (SITW11012)

***Phlegmariurus kajewskii* (Copel.) A.R.Field & Testo**

Etymology: named after the American Botanist S. Frank Kajewski who collected the type.

Diagnostic characters: similar to *P. harmsii* but can be distinguished by its shorter, denser leaves and much thicker texture.

Distribution: endemic to the Solomon Islands.

Ecology: only recorded from Vanikoro but locally common, growing in damp forests at altitudes of 500–800 m.



Habitat (SITW07700)



Stem base (SITW11141)



Stem apex (SITW11141)



Strobili (SITW11141)

***Phlegmariurus longus* (Copel.) A.R.Field & Bostock**

Etymology: *longus* = long; referring to the very elongated stem.

Diagnostic characters: similar to *P. squarrosus* in gross morphology but differs in the fertile region being much narrower than the sterile region.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon epiphyte found in lowland forests below 500 m, usually on very tall trees thus hard to find.



Plant (SITW00590)



Stem base (SITW10583)



Stem apex (SITW10583)



Strobili (SITW10583)

***Phlegmariurus nummulariifolius* (Blume) Ching**

Etymology: *nummularis* = circular, coin-like; *folius* = leaf; referring to the ovate sterile leaves.

Diagnostic characters: the only species of *Phlegmariurus* in the Solomon Islands with ovate leaves.

Distribution: from Malesia to the Pacific Islands; type from Java.

Ecology: a common species found in lowland and montane forests at altitudes of 0–1,200 m.



Plant (SITWo4038)



Stem bases (SITWo4038)



Sterile leaves (SITWo6869)



Strobili (SITWo4038)

***Phlegmariurus oceanianus* (Herter) A.R.Field & Bostock**

Etymology: *oceanianus* = growing near the sea; referring to the habitat where the plant was initially recorded.

Diagnostic characters: one of the narrow-branched species of this genus in the Solomon Islands, with the sterile branches usually less than 1.5 cm wide. The leaves are a little succulent and fragile.

Distribution: the Solomon Islands and Vanuatu (type locality).

Ecology: a rare epiphyte found in damp forests at altitudes of 300–1,000 m, usually near streams.

Note: newly recorded for the Solomon Islands.



Plant (SITW10438)



Stem bases (SITW10438)



Sterile leaves (SITW10438)



Strobili (SITW10438)

***Phlegmariurus phlegmaria* (L.) T.Sen & U.Sen**

Etymology: *phlegma* = mucus; referring to medical use of the plant.

Diagnostic characters: most similar to *P. harmsii* but can be distinguished by having a narrower stem (1.0 mm, not 1.5–4 mm) and sparser leaves on the basal part of the stem.

Distribution: throughout the Old World tropics; type from Sri Lanka.

Ecology: occasionally found in lowland and montane forests below 1,200 m.

Note: several cryptic species may be present in this broadly circumscribed species, further study is needed (A.R.Field, pers. comm., 2016).



Plant (SITW11015)

***Phlegmariurus phlegmarioides* (Gaudich.) A.R.Field & Bostock**

Etymology: *phlegmarioides* = *phlegmaria*-like; referring to the resemblance to another congeneric species *P. phlegmaria*.

Diagnostic characters: with leaves arranged in 4 lines on the distal stems.

Distribution: Malesia, the Pacific Islands, and Australia; type from Moluccas.

Ecology: an uncommon lowland epiphyte usually found on big trees near the coast or streams.



Stem base (SITW11015)



Cross section of basal stem (SITW06915)



Strobilus (SITW06915)



Sterile leaves, backlight (SITW06915)



Cross section of distal stem (SITW06915)



Plant (SITW05014)



Stem bases (SITW10498)



Stem apex (SITW10498)

Sporophylls and sporangia
(SITW05014)

***Phlegmariurus squarrosus* (G.Forst.) Á.Löve & D.Löve**

Etymology: *squarrosus* = rough with projections; referring to the spreading leaves.

Diagnostic characters: can be confused with *P. longus* when sterile but the fertile region of *P. squarrosus* is similar to the sterile region, whereas it is much narrower in *P. longus*.

Distribution: Asia, Malesia, and the Pacific Islands; type from Tahiti.

Ecology: an uncommon species found in lowland and montane forests at altitudes of 0–2,000 m.



Plant (SITW07539)



Sterile leaves (SITW07539)



Sporophylls and sporangia (SITW07539)

***Pseudodiphasium volubile* (G.Forst.) Holub**

Etymology: *volubile* = spinning, entwining; referring to the climbing habit.

Diagnostic characters: climbing, scrambling habit, with distinct strobili, and the two rows of main sterile leaves flattened on one plane.

Distribution: Malesia, the Pacific Islands (type locality), Australia, and New Zealand.

Ecology: an uncommon species of montane forests, found in openings on ridges and summits at altitudes of 1,200–2,200 m.

SELAGINELLACEAE

Selaginella, the only genus of Selaginellaceae, is the world's largest genus of seed-free vascular plants (Jermy, 1990). The genus has a cosmopolitan distribution and occupies a wide range of habitats, including desert, tropical rain forest, alpine, and arctic areas. Recent studies have classified the genus into six or seven subgenera based on molecular evidence, morphology, and distribution (Zhou & Zhang, 2015; Weststrand & Korall, 2016).

One genus with ca. 700 species worldwide; ca. 15 species in the Solomon Islands, 12 of which are listed here.

Plants terrestrial, rupestral, or occasionally epiphytic; **rhizomes** erect, creeping or scandent, sometimes with root-like rhizophores; **leaves** simple, 1-veined, spirally arranged or arranged in 4 ranks with 2 lateral ranks (ventral leaves) and 2 median ranks (dorsal leaves); **strobili** at stem apices, tetragonal or complanate; **sporangium** one per sporophyll, heterosporangiate; **spores** heterosporous, with megaspores and microspores, trilete, globose.

SELAGINELLA P. BEAUV.

Etymology: *selago* = *Lycopodium selago* L., a species of Lycopodiaceae; *ella* = diminutive, small; referring to the resemblance to a small *L. selago*.

Description: same as family.





Plant (SITW11181)



Pseudofrond (SITW11181)

Dorsal view of sterile leaves
(SITW11181)

Dorsal view of strobili (SITW11181)

***Selaginella birarensis* Kuhn**

Etymology: *birarensis* = from Birar, East New Britain (Papua New Guinea), where the type was collected.

Diagnostic characters: distinguished by its creeping main stem with weakly erect branches and asymmetrical strobili (the ventral two ranks of sporophylls are shorter than the dorsal ranks).

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon rupestral species found in shaded places of damp forests below 700 m.

Note: newly recorded for the Solomon Islands. This species was sometimes misidentified as *S. biformis* A. Braun ex Kuhn which differs by having pubescent stems and branches.



Habitat (SITW11590)

***Selaginella breynioides* Baker**

Etymology: referring to the resemblance to *Selaginella breynii* Spring.

Diagnostic characters: one of the large-leaved species along with *S. schlechteri* and *S. sepikensis*. Differs from *S. sepikensis* in its erect habit and from *S. schlechteri* in being much smaller.

Distribution: Fiji (type locality) and the Solomon Islands.

Ecology: a rare species of lowland primary forests, usually found in densely shaded gullies below 600 m.

Note: newly recorded for the Solomon Islands, previously thought to be endemic to Fiji (Brownsey & Perrie, 2011); this species was misidentified as *S. latifolia* (Hook. & Grev.) Spring in the past (Henderson & Hancock, 1988).



Plant (SITW11590)



Dorsal view of sterile leaves, backlight (SITW11590)



Ventral view of sterile leaves (SITW11590)



Dorsal view of strobili (SITWo4066)



Creeping stem (SITW11590)



Plant (SITW06894)



Pseudofrond, backlight (SITW11098)



Ventral view of leaves (SITW11098)



Dorsal view of strobili (SITW11098)

***Selaginella ciliaris* (Retz.) Spring**

Etymology: *ciliaris* = bearing fine hairs; referring to the leaves.

Diagnostic characters: distinguished by the creeping habit, asymmetrical strobili (the ventral two ranks of sporophylls are shorter than the dorsal ranks), small plant size (stems ca. 0.3 mm diameter) and ciliate leaves.

Distribution: widely distributed from Asia, Malesia, Australia to the Solomon Islands; type from Sri Lanka.

Ecology: a rare species found in lowland secondary forests and coconut plantations below 500 m.



Plant (SITW10445)



Stems (SITW10445)



Ventral view of strobili (SITW10445)



Ventral view of sterile leaves (SITW10445)

***Selaginella firmula* A.Braun ex Kuhn**

Etymology: *firmula* = quite firm or strong; referring to the cilia of the leaves.

Diagnostic characters: shares the characters of asymmetrical strobili (the ventral two ranks of sporophylls are shorter than the dorsal ranks) and ciliate leaves with *S. ciliaris*, but differs in much larger plant size and erect habit.

Distribution: Papua New Guinea, the Solomon Islands, Vanuatu (type locality), Fiji, and Samoa.

Ecology: a common species of lowland to montane primary and secondary forests below 900 m, usually growing on damp rocks.



Plants (SITW05656)



Pubescent stem (SITW10451)



Dorsal view of branch (SITW10451)



Ventral view of leaves (SITW10451)

***Selaginella leveriana* Alston**

Etymology: named after the English agriculturist Robert John Aylwin Wallace Lever who collected many *Selaginella* specimens in the Solomon Islands.

Diagnostic characters: one of the larger species with erect pseudofronds that can reach over 70 cm long, pentagonally shape pseudofronds, tetragonous strobili (all the sporophylls are similar) and pubescent stems.

Distribution: Papua New Guinea, the Solomon Islands (type locality), Vanuatu, and Fiji.

Ecology: a very common species of lowland to montane forests below 900 m, very often found growing together with *S. rechingeri*.



Habitat (SITW11075)



Dorsal view of branch, backlight (SITW11075)



Dorsal view of strobili (SITW11580)



Ventral view of sterile leaves (SITW11075)

***Selaginella nana* (Desv.) Spring**

Etymology: *nana* = small; referring to the plant size.

Diagnostic characters: the smallest (less than 15 cm tall) of the erect *Selaginella* species in the Solomon Islands. Dorsal leaves have a strongly ciliate acroscopic margin.

Distribution: Papua New Guinea (type locality) and the Solomon islands.

Ecology: a common species of both lowland forests and garden areas with light shade; terrestrial or growing on boulders.



Habitat (SITW11577)

***Selaginella poperangensis* Hieron.**

Etymology: from Poporang Island in the Solomon Islands, where the type was collected.

Diagnostic characters: can be confused with *S. leveriana*, but differs in smaller plant size (less than 50 cm tall) and glabrous stems.

Distribution: endemic to the Solomon Islands.

Ecology: a very common species found in lowland forests below 800 m.



Rhizophores (SITW11577)



Stem (SITW11577)



Dorsal view of branch, backlight (SITW11577)



Strobili (SITW11577)



Dorsal view of sterile leaves (SITW11577)



Ventral view of sterile leaves (SITW11577)



Plant (SITW03321)



Stem (SITW10439)



Dorsal view of branch (SITW10439)



Dorsal view of branch, backlight (SITW10439)

***Selaginella rechingeri* Hieron.**

Etymology: named after the Austrian botanist Karl Rechinger who collected the type.

Diagnostic characters: this species can be easily recognized by the pinnate pseudofronds, with long and tapering pseudopinnae.

Distribution: Papua New Guinea (type locality), the Solomon Islands, Vanuatu, and Fiji.

Ecology: the most common species of the genus in the Solomon Islands, found in lowland and montane forests and forest margins below 900 m.



Habitat (SITW11599)



Stem leaves (SITW11599)



Dorsal view of branch (SITW10543)



Ventral view of branch (SITW10543)

***Selaginella schlechteri* Hieron.**

Etymology: named after the German botanist Friedrich Richard Rudolf Schlechter who collected the type.

Diagnostic characters: distinguished from all other *Selaginella* species in the Solomon Islands by its much larger size with erect pseudofronds that can reach over 1 m long.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a rare species of lowland to montane forests at altitudes of 100–1,000 m.



Plant (SITW05389)



Ventral view of branch (SITW05389)



Creeping habit and rhizophores (SITW10493)



Dorsal view of branch, backlight (SITW10493)

***Selaginella sepikensis* Hieron. ex Brause**

Etymology: from the Sepik area in Papua New Guinea, where the type was collected.

Diagnostic characters: the branches are wider than any other *Selaginella* species in the Solomon Island with long creeping main stems.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a common species found in lowland secondary forests below 500 m and sometimes in garden areas with light shade.



Plants (SITW10449)



Dorsal view of stem leaves
(SITW10449)



Ventral view of sterile leaves
(SITW10449)



Strobili (SITW10449)

***Selaginella whitmeei* Baker**

Etymology: named after the British missionary Samuel James Whitmee who collected the type.

Diagnostic characters: a very distinct species by its branching pattern, compact leaf arrangement and broadly ovate median leaves.

Distribution: Samoa (type locality) and the Solomon Islands.

Ecology: a rare terrestrial, growing on slopes along streams at lowland primary forests in San Jorge of Isabel Province.

Note: newly recorded for the Solomon Islands, previously thought to be endemic to Samoa (Christensen, 1943).



Habitat (SITW11082)

***Selaginella* sp.**

Diagnostic characters: very similar to *S. leveriana* but differs by having glabrous stems. Can be also confused with *S. poperangensis* but differs in larger plant size (more than 50 cm tall).

Ecology: a locally very common terrestrial found in lowland forests below 700 m.

Note: this species only recorded from Santa Cruz Islands where *S. leveriana* is absent and it might be a variety of *S. leveriana*.



Rhizophores (SITW11082)



Ventral view of sterile leaves (SITW11082)



Stem (SITW11082)



Dorsal view of sterile leaves (SITW11082)



Strobili (SITW11082)

EQUISETACEAE

Equisetaceae was traditionally classified as a fern ally because of its unique morphology which is very different from most of the ferns. Recent molecular phylogenetic analysis shows that Equisetaceae is sister to the rest of the extant ferns (Pryer & al., 2001; Guillon, 2007). Several morphological characters such as having spermatozoids and the structure of the roots also support the relationship of Equisetaceae and other ferns.

One genus with ca. 15 species worldwide; 1 subspecies in the Solomon Islands.

Plants terrestrial; **rhizomes** creeping underground, with upright green stems; **stems** grooved, hollow, whorls of branches radiating from nodes like spokes from a wheel; **leaves** reduce to a short, toothed sheath; **sporangia** borne around undersurface of peltate sporangiophores on terminal strobili; **spores** green.

EQUISETUM L.

Etymology: *equus* = horse; *seta* = bristle; referring to the resemblance of the shoots to a horse's tail.

Description: same as family.





Habitat (SITW11119)



Stem base (SITW11119)



Sheaths (SITW11119)



Strobilus (SITW11119)

***Equisetum ramosissimum* Desf. subsp. *debile* (Roxb. ex Vaucher) Hauke**

Etymology: *ramosissimum* = the most branched; *debile* = weak; referring to their branched and slender stems.

Diagnostic characters: differs from most other ferns in having upright, green, fluted stems with whorls of branches, unlike the normal pinnatifid fern fronds.

Distribution: widely distributed from Asia, Malesia to the Pacific Islands; type from India.

Ecology: a rare lowland species found in freshwater streams and swamps, rooted in mud.

PSILOTACEAE

Traditionally, the simple morphology of whisk ferns (Psilotaceae) was thought to reflect a comparatively close relationship to the extinct vascular plants of the Devonian period. However, molecular phylogenetic studies have shown the Psilotaceae is instead most closely related to Ophioglossaceae, with the two families diverging during the Permian (ca. 250 million years ago; Rothfels & al., 2015).

Two genera with ca. 17 species worldwide; 2 genera and 5 species in the Solomon Islands, 4 of which are listed here.

Epiphytic, less often terrestrial; **rhizoids** creeping, brown, roots absent; **aerial shoots** erect or pendulous, green, branched or unbranched; **leaves** small or scale-like, with a single vein or lacking veins, arranged spirally or distichously; **sporangia** form synangia, thick-walled, opening by a slit; **spores** reniform, monolete, many (> 1000) per sporangium.

Psilotaceae

Key to genera

- 1a. Leaves inconspicuous; synangia with three sporangia..... *Psilotum*
- b. Leaves conspicuous; synangia with two sporangia..... *Tmesipteris*

PSILOTUM Sw.

Etymology: *psilos* = naked, smooth; referring to the smooth aerial shoots and naked sporangia.

Description: epiphytic or terrestrial; aerial shoots branching dichotomously repeatedly; synangium borne on the axil between a pair of scale-like leaves, each contains three sporangia.



TMESIPTERIS BERNH.

Etymology: *tmesis* = incision; *pterus* = fern; referring to the forked sporophyll.

Description: usually epiphytic, sometimes terrestrial; aerial shoots unbranched; leaves simple, oblong, acuminate at the apex; synangium borne on the axil of a branched leaf, each contains two sporangia.





Plant (SITW00547)



Rhizoids (SITW10570)



Synangia (SITW10570)



Aerial shoot and leaves (SITW10570)

***Psilotum complanatum* Sw.**

Etymology: *complanatum* = flattened; referring to the flattened shoots.

Diagnostic characters: can be distinguished from *P. nudum* by the wide, flattened shoots.

Distribution: Pantropical; type from Jamaica.

Ecology: a common species found in lowland and montane forests below 1,500 m.



Plant (SITW10516)



Rhizoids (SITW11043)



Synangia (SITW11043)



Aerial shoot (SITW11043)

***Psilotum nudum* (L.) P.Beauv.**

Etymology: *nudum* = naked; referring to the inconspicuous leaves.

Diagnostic characters: can be distinguished from *P. complanatum* by its narrow, circular shoots.

Distribution: Pantropical; type from India.

Ecology: a common species found in lowland forests, coastal scrubs and plantations below 300 m.



Plants (SITW04922)



Basal part of an aerial shoot (SITW04922)



Mature synangium (SITW07589)



Adaxial surface of leaves (SITW07589)

***Tmesipteris ovata* N.A.Wakef.**

Etymology: *ovata* = egg-shaped; referring to the leaf shape.

Diagnostic characters: similar to *T. solomonensis* and the two may be found in the same habitat, but *T. ovata* is a larger species and the leaves are arranged radially, even at the apex of the shoots.

Distribution: Australia (type locality), the Solomon Islands, and Vanuatu.

Ecology: an uncommon epiphyte of montane forests, mostly growing on tree fern trunks at altitudes of 1,000–1,700 m.

Note: Braithwaite (1973) tentatively identified this species as *T. tannensis* (Spreng.) Bernh., a New Zealand endemic species with biconic synangia, whereas *T. ovata* has testiculate synangia.



Habitat (SITW11675)



Young synangia (SITW11675)



Mature synangia (SITW11675)



Leaves, backlight (SITW11675)

***Tmesipteris solomonensis* Braithwaite**

Etymology: from the Solomon Islands, where the type was collected.

Diagnostic characters: similar in size to *T. ovata* but differs in that the distal leaves are in one plane, not arranged radially.

Distribution: endemic to the Solomon Islands.

Ecology: a rare species of montane forests at altitudes around 1,000 m, usually found growing on tree fern trunks.

OPHIOGLOSSACEAE

Ophioglossaceae is one of the earliest diverging lineages of ferns. Its closest affinity is to the whisk ferns (Psilotaceae). The fossil record of the Ophioglossaceae can be traced back to the early Tertiary, but it is likely much older than this (Rothwell & Stockey, 2008). Because many members of the family are morphologically similar, Ophioglossaceae is one of the most taxonomically difficult groups and species delimitation is still largely unclear (Hauk & al., 2003).

Ten genera with ca. 112 species worldwide; 3 genera and 6 species in the Solomon Islands.

Terrestrial or rarely epiphytic, usually small and fleshy; **rhizomes** mostly erect, less often horizontal; **fronds** hemidimorphic, divided into a photosynthetic portion (trophophore) and a fertile, spore-bearing portion (sporophore); **sporangia** thick-walled, opening by a slit, annulus absent; **spores** many (> 1000) per sporangium, globose, trilete.

Key to genera

- 1a. Sterile leaves palmate, veins free..... *Helminthostachys*
- b. Sterile leaves simple, veins reticulate..... 2
- 2a. Sporophores arising from the middle of the frond..... *Ophioderma*
- b. Sporophores arising as a continuation of the stipe..... *Ophioglossum*

HELMINTHOSTACHYS KAULF.

Etymology: *helminthos* = worm; *stachys* = spike; referring to the arrangement of the sporangia on the sporophore.

Description: terrestrial; rhizomes fleshy, short creeping; fronds palmate on a long glabrous stipe, veins free, dividing; sporophores with sporangia on short branches clustered around the distal part.



OPHIODERMA (BLUME) ENDL.

Etymology: *ophis* = snake; *derma* = skin; presumably referring to the venation of the fronds.

Description: epiphytic or sometimes terrestrial; rhizomes fleshy, without scales, short creeping or erect; fronds pendent, branched, veins reticulate; sporophores arising from the middle of the frond; sporangia in two rows, one each side of the sporophore.



OPHIOGLOSSUM L.

Etymology: *ophis* = snake; *glossa* = tongue; referring to the shape of the sporophore.

Description: terrestrial; rhizomes fleshy, without scales, short creeping or erect; fronds linear, simple, veins reticulate; sporophores arising as a continuation of the stipe; sporangia in two rows, one each side of the sporophore.





Plant (SITW10492)



Sporophore (SITW10533)



Rhizome (SITW10533)



Venation (SITW10533)

***Helminthostachys zeylanica* (L.) Hook.**

Etymology: referring to Ceylon, the old name of Sri Lanka, where the type was collected.

Diagnostic characters: a very distinct species with its palmate fronds with an erect sporophore in the center.

Distribution: widely distributed from Asia, Malesia, Australia to Pacific Islands; type from Sri Lanka.

Ecology: a rare lowland species, usually found in swampy forests below 300 m.



Plants (SITW04905)



Rhizome and young frond (SITW10575)



Sporophore (SITW10575)



Trophophore, backlight (SITW10575)

***Ophioderma falcatum* (C.Presl) O.Deg.**

Etymology: *falcatum* = sickle-shaped; referring to the frond shape.

Diagnostic characters: distinguished from *O. pendulum* by the usually terrestrial habit and erect fronds.

Distribution: from the Philippines to the Pacific Islands; type from Hawaii.

Ecology: a common species usually found in cloud forests growing mixed with moss.

Note: this species might be an ecological form of *O. pendulum*; further study is needed to confirm its distinctness.



Plants (SITW10517)



Rhizome (SITW10517)



Sporophore (SITW10517)



Trophophore, backlight (SITW11632)

***Ophioglossum pendulum* (L.) C.Presl**

Etymology: *pendulum* = hanging down; referring to the plant's habit.

Diagnostic characters: much larger than congeneric species in the Solomon Islands. Plants epiphytic and hanging with strap shaped fronds.

Distribution: throughout Paleotropics; type from India.

Ecology: a common lowland to submontane forest species at altitudes below 800 m.

Note: we recognized the plants growing in higher altitude with shorter and erect fronds as *O. falcatum*, however, further study is needed to clarify their relationship.



Plants (SITW05782)



Rhizome (SITW11080)



Sporophore (SITW04032)



Young sporophore (SITW11080)

***Ophioglossum lineare* Schltr. & Brause**

Etymology: *lineare* = linear; referring to the sporophore shape.

Diagnostic characters: can be easily distinguished from the other species by the frond being entirely sporophore.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a rare species found on hillslopes of lowland forests below 700 m, usually sharing the same habitat with Schizaeaceae.

Note: newly recorded for the Solomon Islands; being previously known only from the type locality.



Plants (SITW05325)



Rhizome (SITW11053)



Sporophore (SITW11053)



Trophophore (SITW11107)

***Ophioglossum nudicaule* L.f.**

Etymology: *nudicaule* = naked-stemmed; referring to the morphology of the sporophore.

Diagnostic characters: distinguished from *O. reticulatum* by the cuneate frond bases, and the usually deeply subterranean rhizomes that leave the fronds close to the soil surface.

Distribution: widely distributed from Africa (type locality), Central and South America, Asia, and the Pacific Islands.

Ecology: an uncommon species found in grassland below 600 m.

Note: the name *O. nudicaule* has been widely applied across a very broad geographic area. Further studies are needed to examine whether they are all the same species.



Plants (SITW05361)



Rhizome (SITW03053)



Sporophore (SITW03053)



Trophophore (SITW05361)

***Ophioglossum reticulatum* L.**

Etymology: *reticulatum* = reticulate; referring to the venation of the trophophore.

Diagnostic characters: can be confused with *O. nudicaule* but *O. reticulatum* has truncate or sometimes cordate frond bases, and the rhizomes are usually shallowly subterranean so the fronds are held well above the soil surface.

Distribution: Pantropical; type from South Africa.

Ecology: an uncommon species usually found in damp forests below 850 m.

MARATTIACEAE

Marattiaceae is one of the early diverging lineages of the ferns and their fossil record can be traced back to the Upper Cretaceous. During that time, the family played a dominant role in the tropical wetland forests, and some grew with trunks several meters tall (Rothwell & Stockey, 2008). The extant members of Marattiaceae, although lacking the trunks of their tree-like ancestors, are still some of the largest ferns in tropical forests.

Six genera with ca. 111 species worldwide; 3 genera and ca. 4 species in the Solomon Islands. Species delimitation of *Ptisana* needs further study.

Terrestrial or occasionally epiphytic; **rhizomes** erect, ascending, or creeping; **fronds** monomorphic or less often dimorphic, simple, palmately lobed, or pinnately compound, pulvini (joint-like thickening) at base of fronds and pinnae, veins free or reticulate; **sori** lacking true indusia, sporangia thick-walled, at least partially fused into synangia; **spores** monolete or trilete.

Key to genera

- 1a. Fronds palmate; sori spread over lamina surface..... *Christensenia*
 - b. Fronds 2- to 3-pinnate; sori close to pinnule margins..... 2
- 2a. Sporangia fully fused into synangia..... *Ptisana*
 - b. Sporangia fused basally but free apically..... *Angiopteris*

ANGIOPTERIS HOFFM.

Etymology: *angeion* = case, capsule; *pterus* = fern; referring to the synangia.

Description: terrestrial; rhizomes erect, forming a short trunk; a pair of large leathery cup-like stipules present at the stipe base; fronds 1- to 2-pinnate, veins free, with or without recurrent false veins; synangia on veins near the pinnule margins, formed by a partially fused double row of sporangia.



CHRISTENSENIA MAXON

Etymology: named after the Danish botanist Carl Frederik Albert Christensen.

Description: terrestrial; rhizomes creeping, a pair of small fleshy stipules present at the base of each stipe; fronds simple to palmate, fleshy, veins reticulate; sporangia in rows, fused to a ring, each opening by a slit.



PTISANA MURDOCK

Etymology: *ptisana* = pearl barley; referring to the form of the synangium.

Description: terrestrial; rhizomes erect, a pair of large leathery stipules present at the stipe base; fronds 2- to 3-pinnate; synangia on veins near the pinnule margins, completely fused.





Plant (SITW11093)



Rhizome (SITW11093)



Synangia (SITW07661)



Venation (SITW11093)

***Angiopteris microura* Copel.**

Etymology: *microura* = small tail; referring to the gradually narrowed pinnules.

Diagnostic characters: the only *Angiopteris* species in the Solomon Islands, easily distinguished by the huge 2-pinnate fronds over 3 m in length.

Distribution: only reported from the Solomon Islands, but likely also to be in Papua New Guinea.

Ecology: a very common, lowland to mid-elevation, huge fern, mostly found in gullies below 1,000 m.

Note: this species was sometimes identified as *A. evecta* (G.Forst.) Hoffm., another species from the Pacific Islands. However, *A. microura* can be distinguished by having no false veins on the pinnules whereas *A. evecta* has long false veins extending from the margin to near the midrib.



Plant (SITW05775)

***Christensenia aesculifolia* (Blume) Maxon**

Etymology: *Aesculus* = a genus of flowering plant, horse chestnut; *folia* = fronds; referring to the resemblance of the fronds.

Diagnostic characters: a very distinct fern with palmate (sometimes simple) fronds that have a fleshy texture, and sporangia fused into circular synangia.

Distribution: Asia, Malesia, and the Solomon Islands; type from Java.

Ecology: a rare species found in damp lowland forests below 300 m, usually near streams.



Rhizome (SITW11161)



Synangia (SITW11161)



Venation (SITW11161)



Plant with simple fronds (SITW05775)



Scales on stipe (SITW11161)



Plant (SITW11037)

***Ptisana smithii* (Mett. ex Kuhn) Murdock**

Etymology: named after the American botanist Albert Charles Smith.

Diagnostic characters: can be distinguished from *P. ternatea* by having 2-pinnate fronds.

Distribution: the Solomon Islands, Vanuatu (type locality), Fiji, Samoa, and Tonga.

Ecology: locally common in Vanikoro but rare in other places, growing on slopes of damp forests at altitudes of 100–1,500 m.

Note: newly recorded for the Solomon Islands. The plants from the western part of the Solomon Islands (Kolombangara, Rendova) that are usually found at higher altitudes and with larger fronds might be another taxon. Further study is needed.



Plant, high mountain form (SITW04892)



Scales on stipe base (SITW11037)



Synangia, high mountain form (SITW04892)



Synangia (SITW11037)



Venation (SITW11037)



Plant (SITW11139)

***Ptisana ternatea* (de Vriese) Murdock**

Etymology: from Ternate Island in Moluccas where the type was collected.

Diagnostic characters: can be distinguished from *P. smithii* by having 3-pinnate fronds.

Distribution: the Philippines, Indonesia, Papua New Guinea, and the Solomon Islands; type from Moluccas.

Ecology: a common species found in montane forests at altitudes of 0–1,500 m.

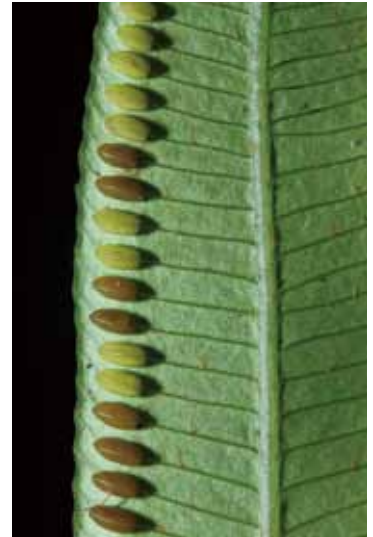
Note: plants from the western part of the Solomon Islands tend to have smaller ultimate segments (4–9 cm long × 0.6–1.6 cm wide). Further study is needed to clarify the relationship with the plants with larger ultimate segments (13–18 cm long × 2.3–2.8 cm wide).



Scales on stipe base (SITW11139)



Pulvini at pinna base (SITW11139)



Synangia (SITW11139)



Plant with smaller segments (SITW05642)



Synangia of plant with smaller segments (SITW05642)

OSMUNDACEAE

Osmundaceae is the most ancient extant family of leptosporangiate ferns. They are well-represented in the fossil records and can be traced back to the Permian (Rothwell & Stockey, 2008). The family also occupies an important phylogenetic position as sister to all of the other extant leptosporangiate ferns and shares characters with both eusporangiate and leptosporangiate ferns (Metzgar & al., 2008).

Six genera with ca. 18 species worldwide; 1 species in the Solomon Islands.

Terrestrial or sometimes rupestral; **rhizomes** erect; **fronds** 1- to 3-pinnate, usually bearing wool-like hairs when young, dimorphic, hemidimorphic, or less often monomorphic, veins free; **sporangia** not aggregated in sori, following veins or entirely covering contracted fertile segments, sporangia large, each with 128–512 spores; **spores** green, trilete.

LEPTOPTERIS C.PRESL

Etymology: *lepto* = thin, delicate; *pteris* = fern; referring to the thin texture of the fronds.

Description: terrestrial; rhizomes erect, sometimes forming a trunk; fronds 2-pinnate, laminae membranous in texture, veins free; sporangia scattered along veins on abaxial sides of fronds, exindusiate.





Plant (SITWo7548)



Rhizome apex (SITW11649)



Sporangia (SITWo7548)



Venation (SITW11649)

***Leptopteris laxa* Copel.**

Etymology: *laxa* = not crowded, spreading; referring to the well-spaced pinnules.

Diagnostic characters: a very distinct fern with a trunk like a tree fern but translucent, membranous laminae like Hymenophyllaceae.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon species only found in mossy montane forests at altitudes of 900–1,500 m.

Note: there are only minor differences in frond pubescence and division with two other species, *L. alpina* (Baker) C.Chr. from Papua New Guinea and *L. wilkesiana* (Brack.) Christ from elsewhere in the south-west Pacific (Copeland, 1936). Further study is needed to confirm the distinctiveness of each species.

HYMENOPHYLLACEAE

Hymenophyllaceae is one of the earliest diverging families of leptosporangiate ferns. The family is characterized by the unique single-cell-thick laminae found in most species, and the monophyly of the family has seldom been questioned. Traditionally, two broadly defined genera, *Hymenophyllum* and *Trichomanes*, were recognized based on the character of involucre. Recent molecular phylogenetic studies have suggested 9 monophyletic genera (Ebihara & al., 2006).

Nine genera with ca. 434 species worldwide; 7 genera and ca. 45 species in the Solomon Islands, 34 of which are listed here.

Plants minute to medium in size, terrestrial, epiphytic or rupestral; **rhizomes** slender, mostly creeping, or sometimes erect; **fronds** membranous, usually one cell thick between veins, simple to highly divided, monomorphic, veins free; **sori** marginal, indusia conical, tubular, or clam-shaped, usually with receptacles; **spores** green, globose, trilete .

Key to genera

- 1a. Rhizomes creeping..... 2
- b. Rhizomes erect..... 7
- 2a. Rhizomes nearly glabrous..... *Hymenophyllum*
- b. Rhizomes densely covered with reddish to dark-colored hairs..... 3
- 3a. Roots absent or replaced by root-like shoots..... 4
- b. Roots present..... 5
- 4a. Continuous false veinlets parallel to true veins present..... *Didymoglossum*
- b. Continuous false veinlets parallel to true veins absent..... *Crepidomanes* (in part)
- 5a. Abortive fronds present..... *Crepidomanes* (in part)
- b. Abortive fronds absent..... 6
- 6a. Minute clavate hairs present on stipes and rachises..... *Vandenboschia*
- b. Minute clavate hairs absent on stipes and rachises..... *Abrodictyum* (in part)
- 7a. Fronds 1-pinnate to 2-pinnatifid..... *Cephalomanes*
- b. Fronds 2-pinnate or more divided..... 8
- 8a. Long reddish hairs absent on stipes and rachises..... *Crepidomanes* (in part)
- b. Long reddish hairs present on stipes and rachises..... 9
- 9a. Laminal cell-walls thin and straight..... *Callistopteris*
- b. Laminal cell-walls thick and wavy or pitted..... *Abrodictyum* (in part)

ABRODICTYUM C.PRESL

Etymology: *abros* = delicate; *dictyon* = reticulate; referring to the cell arrangement on the laminae of the type species, *A. cumingii* C.Presl.

Description: epiphytic or terrestrial; rhizomes erect, short to long creeping; fronds 3- to 4-pinnatifid; sori tubular, involucre truncate.



CALLISTOPTERIS COPEL.

Etymology: *callistus* = beautiful; *pterus* = fern.

Description: terrestrial, epiphytic or rupestral; rhizomes erect to short creeping, thick, hairy at apices; fronds 3- to 4-pinnate, false veinlets absent; sori paratactic, lips truncate, receptacles long-exserted.



CEPHALOMANES C.PRESL

Etymology: *cephalus* = head; *manes* = a kind of cup; referring to the shape of the involucre.

Description: terrestrial or rupestral; rhizomes erect to short creeping; fronds 1-pinnate with asymmetric pinnae, narrowly elliptic, false veinlets absent; sori paratactic, lips sometimes dilated, receptacles long-exserted.



CREPIDOMANES C.PRESL

Etymology: *krepis* = slipper; *manes* = a kind of cup; referring to the shape of the involucre.

Description: epiphytic or rupestral; rhizomes often long creeping or sometimes erect; fronds simple to 4-pinnatifid, false veinlets often present; sori tubular, lips usually bilabiate.



DIDYMOGLOSSUM DESV.

Etymology: *didymus* = double; *glossum* = tongue; referring to the bilabiate lips of the involucre of some species.

Description: epiphytic or rupestral; rhizomes long creeping, usually filiform, densely covered with dark-colored hairs; fronds minute, usually simple, or sometimes lobed to pinnatifid; sori often immersed in the laminae, tubular with dilated lips.



HYMENOPHYLLUM SM.

Etymology: *hymen* = membrane; *phyllon* = leaf; referring to the membranous fronds of the genus.

Description: epiphytic or rupestral; rhizomes long creeping, usually filiform or wiry, nearly glabrous; fronds usually pinnate to 4-pinnate; sori involucre bivalvate, receptacles usually not exserted.



VANDENBOSCHIA COPEL.

Etymology: named after the Dutch botanist R. B. van den Bosch.

Description: epiphytic or rupestral; rhizomes suberect, or short to long creeping, densely covered with multicellular hairs; fronds pinnate to 5-pinnatifid, false veinlets absent, laminae often reduced; sori paratactic, tubular, receptacles long-exserted.





Plants (SITW11007)

***Abrodictyum asae-grayi* (Bosch) Ebihara & K.Iwats.**

Etymology: named after the American botanist Asa Gray who collected the type.

Diagnostic characters: could be easily confused with *A. pluma* but differs in larger plant size and wider ultimate frond segments (>0.3 mm, rather than 0.1 mm).

Distribution: Papua New Guinea, the Solomon Islands, Fiji (type locality), Samoa, and French Polynesia.

Ecology: a much rarer species than *A. pluma*, but sharing the same habitat in mossy forests at altitudes of 600–1,100 m.

Note: newly recorded for the Solomon Islands.



Sori (SITW11007)



Comparison of *A. asae-grayi* (right, SITW11007) and *A. pluma* (left, SITW11006)



Frond (SITW11007)



Frond, backlight (SITW11007)



Rhizome (SITW11007)



Habitat (SITW11673)



Frond, backlight (SITW11673)



Rhizome (SITW11673)



Sori (SITW11673)

***Abrodictyum caudatum* (Brack.) Ebihara & K.Iwats.**

Etymology: *caudatum* = tailed; referring to the frond shape.

Diagnostic characters: sharing the characters of long creeping rhizomes and tree fern-specific epiphytism with *A. flavofuscum*, but distinguished by much smaller plant size and dilated indusia.

Distribution: Australia, New Caledonia, New Zealand, the Solomon Islands, Fiji, and French Polynesia; type from Fiji.

Ecology: epiphytic on tree fern trunks in mossy forests at altitudes of 1,000–1,500 m.

Note: newly recorded for the Solomon Islands.



Plants (SITW11672)



Rhizome (SITW11672)



Frond (SITW11672)



Sori (SITW11672)

***Abrodictyum flavofuscum* (Bosch) Ebihara & K.Iwats.**

Etymology: *flavo* = yellowish; *fuscum* = dusky-brown; referring to the frond color.

Diagnostic characters: a larger plant than *A. caudatum* with tubular indusia lacking dilated lips.

Distribution: New Caledonia (type locality) and the Solomon Islands.

Ecology: epiphytic on tree ferns in mossy forests, sometimes growing in the same habitat with *A. caudatum*.

Note: newly recorded for the Solomon Islands.



Habitat (SITW10587)

***Abrodictyum obscurum* (Blume) Ebihara & K.Iwats.**

Etymology: *obscurum* = dusky, dark; referring to the lamina color.

Diagnostic characters: its stiff, upright habit, unwinged stipes from an erect rhizome, and dark green fronds distinguish *A. obscurum* from any other Hymenophyllaceae in the Solomon Islands.

Distribution: widely distributed in the tropics of the Old World; type from Java.

Ecology: a common species found in lowland to mountain forests at altitudes of 0–1,800 m.

Note: three different indusium forms (i.e., toothed and dilated, entire and dilated, and tubular) are found in the Solomon Islands plants. The name *A. dentatum* (Bosch) Ebihara & K.Iwats. is widely used in the Pacific Islands (Murdock & Smith, 2003; Brownsey & Perrie, 2011) and might be applied to one of the forms, further study is needed.



Rhizome, roots, and stipe bases (SITW10587)



Sori with toothed and dilated indusia (SITW10587)



Frond (SITW10587)



Sori with entire and dilated indusia (SITW10607)



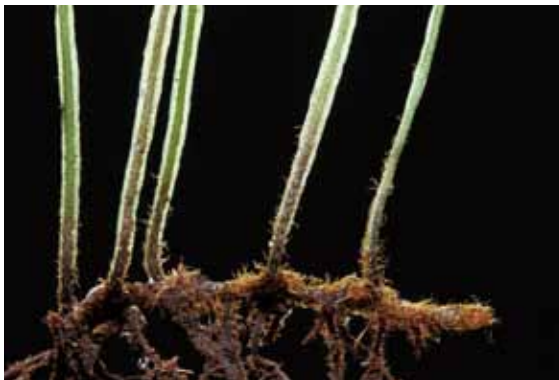
Sori with tubular indusia (SITW04900)



Plants (SITW11006)



Frond (SITW11006)



Rhizome and stipe bases (SITW11006)



Sori (SITW11006)

***Abrodictyum pluma* (Hook.) Ebihara & K.Iwats.**

Etymology: *pluma* = soft feather; referring to its finely divided fronds.

Diagnostic characters: a distinctive species in its finely dissected fronds and long underground rhizomes with fronds appearing in rows.

Distribution: widely distributed throughout the tropics of the Old World; type from Borneo.

Ecology: a common species found in moist mountain forests on ridges, slopes, and gullies at altitudes of 300–1,550 m. Usually terrestrial, but occasionally seen growing along horizontal tree branches.



Habitat (SITW11659)



Rhizome (SITW11659)



Frond (SITW11659)



Sorus (SITW11659)

***Abrodictyum schlechteri* (Brause) Ebihara & K.Iwats.**

Etymology: named after the German botanist Friedrich Richard Rudolf Schlechter who collected the type.

Diagnostic characters: can be easily distinguished from other *Abrodictyum* species by its very hairy stipes and short erect rhizomes.

Distribution: Borneo, Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a very rare species growing in mossy forests at altitudes of 1,200–1,700 m.



Habitat (SITW10568)



Stipe base (SITW10568)



Sori (SITW10568)



Adaxial surface of lamina,
backlight (SITW10568)

***Callistopteris apiifolia* (C.Presl) Copel.**

Etymology: *apii* = *Apium*, a genus of flowering plants; *folia* = leaf; referring to the resemblance of the fronds to *Apium* leaves.

Diagnostic characters: a tall, tufted terrestrial species that can be easily recognized in the field by its conspicuously hairy stipes.

Distribution: Asia, Malesia, and the Pacific Islands; type from the Philippines.

Ecology: a common species found in mountain forests at altitudes of 600–1,500 m.



Habitat (SITW10599)



Sori (SITW10599)



Frond base (SITW10599)



Adaxial surface of lamina, backlight (SITW10599)

***Cephalomanes acrosorum* (Copel.) Copel.**

Etymology: *acro* = apex; *sorum* = sori; referring to the sori being confined to the frond apices.

Diagnostic characters: distinguished by the sori being only on the apical pinnae which are much reduced in their size.

Distribution: New Guinea (type locality), Micronesia, and the Solomon Islands.

Ecology: an uncommon rheophyte usually found in shaded places at low altitudes.



Plants (SITW10460)



Frond base (SITW10460)



Sori (SITW10460)



Adaxial surface of lamina (SITW10460)

***Cephalomanes atrovirens* C.Presl**

Etymology: *atrovirens* = very dark green; referring to the color of the fronds.

Diagnostic characters: the whip-like segments on the basiscopic pinna margins and the short stipes distinguish it from the similar species *C. javanicum*.

Distribution: Malesia, Australia, the Solomon Islands, and Vanuatu; type from the Philippines.

Ecology: a very common lowland forest species, usually found in humid gullies or slopes.



Plant (SITW 13188, photographed by T.-C. Hsu)



Adaxial surface of frond (SITW 13188, photographed by T.-C. Hsu)



Adaxial surface of frond (SITW 13188, photographed by T.-C. Hsu)



Hairs on stipes (SITW 13188, photographed by T.-C. Hsu)

***Cephalomanes javanicum* (Blume) C.Presl**

Etymology: *javanicum* = from Java in Indonesia, where the type was collected.

Diagnostic characters: can be confused with *C. atrovirens* but differs by its longer stipes and the absence of whip-like segments on the basisopic pinna margins.

Distribution: Asia, Malesia, and the Solomon Islands; type from Java.

Ecology: shares the same habitat as *C. atrovirens* but is less common.



Habitat (SITW10421)



Dwarf fronds on rhizome (SITW10421)



Abaxial surface of lamina (SITW10421)



Venation (SITW10421)

***Crepidomanes aphlebioides* (Christ) I.M.Turner**

Etymology: *a* = without; *phlebia* = veins; *oides* = like; presumably referring to the dwarf fronds on the rhizome.

Diagnostic characters: the largest epiphytic filmy fern and can be easily identified by the dwarf fronds on the rhizomes.

Distribution: Malesia, Australia, the Solomon Islands, and Fiji; type from Papua New Guinea.

Ecology: found in lowland forests below 900 m, tolerating quite dry conditions but common in gullies.



Plant (SITWo4044)



Adaxial surface of lamina (SITW10479)



Sori (SITWo4044)



Venation (SITW10479)

***Crepidomanes bipunctatum* (Poir.) Copel.**

Etymology: *bi* = two; *punctatum* = dotted; referring to the morphology of the involucre.

Diagnostic characters: the only *Crepidomanes* species with elliptic indusia with large free lips, resembling species of *Hymenophyllum* in this respect, but differs by its densely hairy rhizomes.

Distribution: throughout the Old World tropics; type from Madagascar.

Ecology: an uncommon species found in lowland, humid forests below 700 m.



Plants (SITW05036)



Sori (SITW10478)



Venation (SITW10514)



Rhizome (SITW10514)

***Crepidomanes humile* (G.Forst.) Bosch**

Etymology: *humile* = close to the ground; referring to the habit of the plant.

Diagnostic characters: similar to *C. bipunctatum* when sterile but has shorter, less divided fronds. When fertile, the elliptic indusia of *C. bipunctatum* separate it from *C. humile* which has tubular indusia.

Distribution: throughout Asia, Malesia, and the Pacific Islands; type from the Society Islands.

Ecology: a common species found in lowland forests below 800 m, usually on tree trunks.



Plants (SITW11063)



Rhizome (SITWo3066)



Winged stipe (SITWo6918)



Sori (SITWo6918)

***Crepidomanes intermedium* (Bosch) Ebihara & K.Iwats.**

Etymology: *intermedium* = intermediate; referring to the intermediate morphology between *Trichomanes millefolium* C.Presl (= *Crepidomanes grande* (Copel.) Ebihara & K.Iwats.) and *Trichomanes maximum* Blume (= *Vandenboschia maxima*).

Diagnostic characters: the erect rhizomes, appressed white hairs on the laminae, and flared mouth of the indusia are distinctive.

Distribution: New Guinea and the Pacific Islands; type from Fiji.

Ecology: a common species usually found close to stream banks at altitudes of 0–1,310 m.



Habitat (SITW10560)



Frond, backlight (SITW10560)



Sori (SITW10560)



Venation (SITW10560)

***Crepidomanes kurzii* (Bedd.) Tagawa & K.Iwats.**

Etymology: named after the German botanist William Sulpiz Kurz, who collected the type.

Diagnostic characters: a very small filmy fern but obvious when abundant on rocks. The dark green color, pinnate fronds, and damp streamside habitat are characteristic.

Distribution: throughout Asia, Malesia, and the Pacific Islands; type from South Andaman Island in India.

Ecology: an uncommon species found in lowland forests below 700 m, in very damp habitats such as on rocks in stream beds.



Plants (SITWo7600)



Abaxial surface of lamina (SITWo7600)



Proliferous bud (SITWo7600)



Sorus (SITWo7600)

***Crepidomanes minutum* (Blume) K.Iwats.**

Etymology: *minutum* = small; referring to the size of the plants.

Diagnostic characters: similar to *C. saxifragoides* but differs in having pinnatifid and proliferous fronds.

Distribution: throughout the Paleotropics; type from Java.

Ecology: an uncommon species found in humid forests at altitudes of 500–1,500 m.

Note: in the past, this species was identified as *C. proliferum* (Blume) Bostock, which is a synonym of this species (Ebihara & al., 2006). *Crepidomanes minutum* is part of a species complex that includes several diploid lineages and their hybrids; this species was reported as a apogamous diploid in the Solomon Islands (Braithwaite, 1969). Three taxa of *C. minutum* complex (*C. minutum*, *C. saxifragoides*, and *C. sp.*) can be distinguished by morphology in the Solomon Islands.



Plants (SITW10562)



Indusia (SITW10459)



Venation (SITW10562)

***Crepidomanes saxifragoides* (C.Presl) P.S.Green**

Etymology: *Saxifraga* = a genus of flowering plant; *oides* = similar; referring to its fronds being similar to some species of *Saxifraga*.

Diagnostic characters: the small, deeply lobed, almost circular in outline fronds are easy to identify.

Distribution: throughout the Paleotropics; type from the Philippines.

Ecology: a common lowland species found in damp forests below 800 m.

Note: this is a member of the *C. minutum* complex and was reported as a sexual diploid in the Solomon Islands (Braithwaite, 1969).



Plants (SITW05787)



Lamina (SITW05787)



Venation (SITW05787)



Sori (SITW05787)

***Crepidomanes vitiense* (Baker) Bostock**

Etymology: *vitiense* = from Viti Levu of Fiji, where the type was collected.

Diagnostic characters: can be confused with *C. minutum* but differs in having less divided fronds with submarginal false veinlets (visible under magnification).

Distribution: Taiwan, Malaysia, New Guinea, Australia, the Solomon Islands, Fiji (type locality), and New Caledonia.

Ecology: a rare species only known from lowland forests, near a ridge, below 600 m.

Note: newly recorded for the Solomon Islands.



Habitat (SITW11059)



Lamina (SITW11059)



Frond, backlight (SITW11059)



Sori (SITW11059)

***Crepidomanes* sp.**

Diagnostic characters: distinguished from other members of *C. minutum* complex by rheophytic habit, smaller plant size, and simpler frond division (mostly pinnate).

Ecology: an uncommon rheophyte found in lowland forests along rivers.

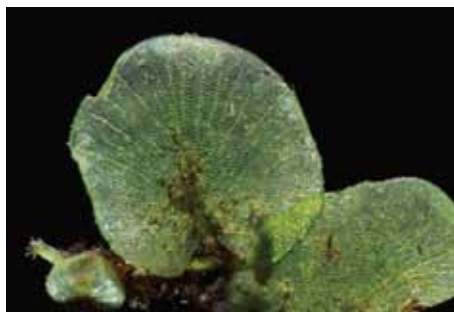
Note: this is a member of the *C. minutum* complex.



Habitat (SITW11056)



Plants (SITW06799)



Fronds (SITW11057)



Sori (SITW06799)

***Didymoglossum beccarianum* (Ces.) Senterre & Rouhan**

Etymology: named after the Italian naturalist Odoardo Beccari who collected the type.

Diagnostic characters: most similar to *D. tahitense* but differs by its fronds not being peltate.

Distribution: widely distributed through Asia, Malesia, Australia, and the Pacific Islands; type from Sarawak.

Ecology: an uncommon lowland species found below 300 m; epiphytic on tree trunks.

Note: this species was usually identified as *D. motleyi* (Bosch) Ebihara & K.Iwats., however, Senterre & al. (2017) suggest that *D. motleyi* is a Borneo endemic species.



Plants (SITW11055)



Fronds and rhizome (SITW11055)



Venation (SITW11055)



Sori (SITW11055)

***Didymoglossum mindorense* (Christ) K.Iwats.**

Etymology: *mindorense* = from Mindoro Island in the Philippines, where the type was collected.

Diagnostic characters: can be easily identified by its minute plant size (less than 4 cm tall) with obovate and pinnatifid fronds.

Distribution: Malesia, Australia, and the Solomon Islands; type from the Philippines.

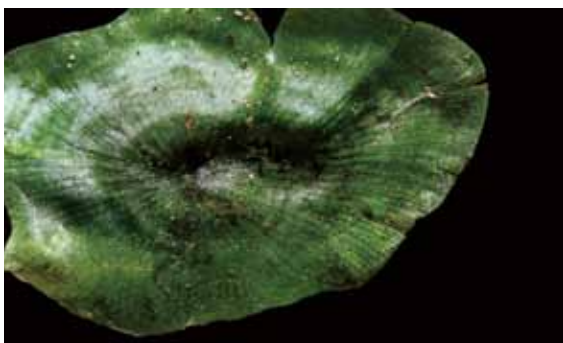
Ecology: a common species found in moist gullies and hillslopes of lowland forests below 750 m.



Plants (SITW11056)



Sori (SITW11056)



Frond (SITW10563)



Venation (SITW11056)

***Didymoglossum tahitense* (Nadeaud) Ebihara & K.Iwats.**

Etymology: *tahitense* = from Tahiti, where the type was collected.

Diagnostic characters: a very distinct species likely to be taken for a liverwort or lichen rather than a fern because of its unusual disk-like fronds that are closely appressed to the smooth tree bark it grows on.

Distribution: widely distributed through Asia, Malesia, Australia, and the Pacific Islands; type from Tahiti.

Ecology: a common species found in lowland forests below 750 m, usually on smooth barked tree trunks.



Plants (SITW11058)



Fronds (SITW11058)



Indusium (SITW11058)



Bivalvate involucre (SITW11058)

***Didymoglossum* sp.**

Diagnostic characters: sharing with *D. tahitense* disk-like fronds but differs in much smaller frond size (ca. 5 mm diameter, rather than 25 mm) and in having a long extended indusium.

Ecology: a rare epiphyte growing on tree bases of lowland damp forests, only recorded from Temotu Province.

Note: this species might be an ecological form of *D. tahitense*; further study is needed to confirm its distinctness (Ebihara, pers. comm., 2016).



Plants (SITW11677)



Bivalvate involucre (SITW11677)



Rhizome (SITW11677)



Adaxial surface of lamina (SITW11677)

***Hymenophyllum angulosum* Christ**

Etymology: *angulosum* = having angles; presumably referring to the frond division.

Diagnostic characters: can be distinguished by the distant branching of the pinnae, long ultimate segments, and the oblong indusium with a truncate apex.

Distribution: Malesia, the Solomon Islands, and Vanuatu; type from Mindoro in the Philippines.

Ecology: an uncommon epiphyte found in damp forests at altitudes of 600–1,500 m.

Note: the Solomon Islands plants used to be identified as *H. treubii* Racib., another similar species from Java. Here we follow Ebihara & al. (2010) in distinguishing two species by receptacle characters, with the Solomon Islands plants with clavate receptacles being *H. angulosum*.



Habitat (SITW04937)



Sorus (SITW07601)



Plants (SITW04937)



Abaxial surface of lamina (SITW07601)

***Hymenophyllum brassii* C.Chr.**

Etymology: named after the Australian botanist Leonard John Brass, who collected the type.

Diagnostic characters: the *Hymenophyllum* with the most strongly toothed fronds (marginal teeth up to 1 mm long) in the Solomon Islands.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a rare, small epiphyte found in high mountains above 1,200 m, usually near ridges or summits.



Habitat (SITW11078)



Sori (SITW11078)



Venation (SITW11192)



Fron base (SITW11192)

***Hymenophyllum copelandii* C.V.Morton**

Etymology: named after the American botanist Edwin Bingham Copeland.

Diagnostic characters: can be distinguished by having long, narrowly oblong fronds, and the imbricate or closely spaced pinnae.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a rare small epiphyte found in lowland forests below 700 m, usually near streams.

Note: this species was sometimes misidentified as *H. polyanthos* (Sw.) Sw. in the past.



Habitat (SITW11005)



Sori (SITW11005)



Venation (SITW11005)



Marginal setae (SITW11005)

***Hymenophyllum digitatum* (Sw.) Fosberg**

Etymology: *digitatum* = radiating like fingers; referring to the lamina divisions.

Diagnostic characters: can be distinguished by its thin stipe with fan-shaped fronds, and a rather pale lamina with marginal setae.

Distribution: throughout Paleotropics; type from Mauritius or Reunion.

Ecology: a common small epiphyte found in mountain forests at altitudes of 600–1,650 m, usually on the dry underside of trunks and overhanging branches.



Plants (SITWo4935)



Lamina (SITWo4935)



Sori (SITWo4935)



Abaxial surface of lamina (SITWo3502)

***Hymenophyllum gorgoneum* Copel.**

Etymology: *gorgoneum* = fierce; presumably referring to the strongly toothed frond margin.

Diagnostic characters: resembles *H. holochilum* in having a toothed lamina margin and a similar segment shape, but is much larger, with more pinnae and is more divided.

Distribution: New Guinea and the Solomon Islands (type locality).

Ecology: a common epiphyte found in damp forests at altitudes of 300–1,200 m.



Plants (SITW11003)



Abaxial surface of lamina (SITW07599)



Sorus (SITW07599)



Venation (SITW11003)

***Hymenophyllum holochilum* (Bosch) C.Chr.**

Etymology: *holos* = entire; *cheilos* = margin; referring to the entire margin of the indusium.

Diagnostic characters: can be distinguished by having toothed fronds, slightly toothed indusia, and hairs on the abaxial surface of the rachis and veins.

Distribution: East Asia (Taiwan), Malesia, and the Pacific Islands; type from Java.

Ecology: an uncommon filmy fern found in mountain forests on ridges at altitudes of 550–1,100 m, usually covering sizeable areas on tree trunks.



Plants (SITW10604)



Sori (SITW10604)



Venation (SITW10604)



Rhizome (SITW11671)

***Hymenophyllum imbricatum* Blume**

Etymology: *imbricatum* = overlapping like tiles; referring to the pinna arrangement.

Diagnostic characters: can be distinguished by its entire frond margins and round to broadly-elliptic indusia.

Distribution: Malesia, the Solomon Islands, and Vanuatu; type from Java.

Ecology: a common filmy fern found in mossy forests at altitudes of 1,000–1,800 m.

Note: the name *H. bamlerianum* Rosenst. used to be applied to this species in the Pacific Islands, but Ebihara & al. (2010) suggested that the name is probably a synonym of *H. imbricatum* Blume, and therefore should not be used. The relationship with the similar species *H. junghuhnii* Bosch needs further study (Ebihara, pers. comm., 2016).



Plant (SITWo4043)



Frond base
(SITWo5685)



Adaxial surface of
lamina (SITWo5685)



Sorus (SITWo5685)

***Hymenophyllum javanicum* Spreng.**

Etymology: *javanicum* = from Java in Indonesia, where the type was collected.

Diagnostic characters: can be confused with *H. angulosum* in the similar plant size, but the fronds of *H. javanicum* are more broadly triangular than *H. angulosum*. *Hymenophyllum javanicum* can also be distinguished by having the apically toothed indusia and the slightly wavy frond margins.

Distribution: widely distributed in Asia, Malesia, the Solomon Islands, and the Pacific Islands; type from Java.

Ecology: a rare epiphyte found in mountain forests, usually in shady damp sites, on hillslopes at ca. 1,000 m.



Plants (SITW11597)



Rhizome (SITW11597)



Lamina, backlight (SITW11597)



Sorus (SITW06937)

***Hymenophyllum pallidum* (Blume) Ebihara & K.Iwats.**

Etymology: *pallidum* = pale; referring to the lamina color.

Diagnostic characters: can be easily identified by its strongly glaucous fronds.

Distribution: Asia, Malesia, Australia, and the Pacific Islands; type from Java.

Ecology: a common species found in mountain forests on ridges at altitudes of 500–1,600 m.



Plants (SITW11670)

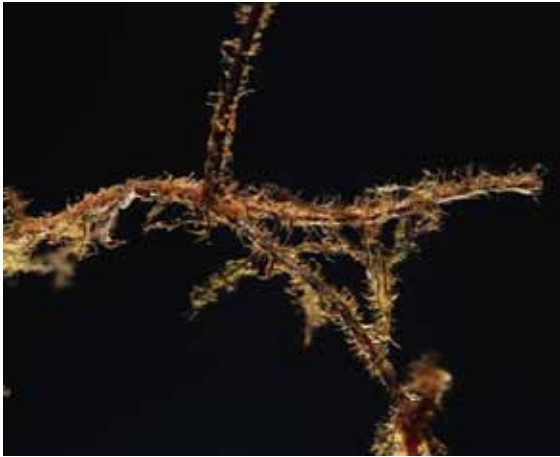
***Hymenophyllum serrulatum* (C.Presl) C.Chr.**

Etymology: *serrulatum* = edged with small teeth; referring to the frond margin.

Diagnostic characters: shares the toothed fronds, nearly entire indusia, and hairy rachis of *H. holochilum*, but differs in having more divided fronds and narrower pinnae.

Distribution: Asia, Malesia, Australia, and the Pacific Islands; type from Java.

Ecology: a common species found in mountain forests on ridges at altitudes of 500–1,600 m.



Rhizome (SITW11670)



Adaxial surface of lamina (SITW11670)



Sori (SITW11670)



Habitat (SITW06951)



Sorus (SITW06951)



Plant (SITW06951)



Young frond (SITW01038)

***Vandenboschia maxima* (Blume) Copel.**

Etymology: *maxima* = greatest; referring to the plant size.

Diagnostic characters: a large species similar to *Crepidomanes intermedium* in size but differs in having a creeping rather than tufted rhizome.

Distribution: widely distributed in Asia, Malesia, and the Pacific Islands; type from Java.

Ecology: a rare species only known from high mountains above 700 m, usually found creeping on rocks near stream beds.

DIPTERIDACEAE

Dipteridaceae is a small fern family with only two genera, *Cheiropleuria* and *Dipteris*, distributed from Asia to the western Pacific. The family has a well-established fossil record and can be dated back to the upper Triassic (ca. 237–201 million years ago). Dipteridaceae is the sister of Matoniaceae (Schuettpelz & Pryer, 2007), and they share a similar morphology.

Two genera with about 11 species worldwide; only 1 species in the Solomon Islands.

Plants terrestrial; **rhizomes** long creeping, covered with bristles or articulate hairs; **fronds** simple or cleft into several parts, monomorphic or dimorphic, veins highly reticulate, with included veinlets; **sori** exindusiate, discrete or acrostichoid; **spores** ellipsoid and monolete, or tetrahedral and trilete.

DIPTERIS REINW.

Etymology: *di* = two; *pterus* = fern; referring to its fronds that are divided into two main parts.

Description: terrestrial; rhizomes long creeping; fronds simple but deeply divided; sori small and scattered over abaxial surface of fronds, exindusiate.





Habitat (SITW11630)

***Dipteris conjugata* Reinw.**

Etymology: *conjugata* = united; referring to the lamina being the joining of two halves.

Diagnostic characters: a very distinctive fern with its umbrella shaped fronds at the end of a long stipe. There is no other fern in the Solomon Islands with which it could be confused.

Distribution: widely distributed from Asia, Malesia to the Pacific Islands; type from Moluccas.

Ecology: a common species found in montane forests, especially on ridges and in open places, forming extensive dense colonies.



Rhizome (SITW07580)



Cross section of rhizome (SITW11023)



Sori (SITW05250)



Young frond (SITW07580)



Venation (SITW11023)

GLEICHENIACEAE

Gleicheniaceae is a fern family of ancient origin and their fossil record can be traced back to the Cretaceous (Rothwell & Stockey, 2008). Most Gleicheniaceae have a rachis of indefinite growth, and pinnae that branch pseudodichotomously and which may extend indeterminately from buds between the pseudodichotomies. The determinate, pinnate fronds of *Stromatopteris* are an exception, while *Diplopterygium* lacks the pseudodichotomous branching of the pinnae.

Six genera with ca. 157 species worldwide; 4 genera and 11 species in the Solomon Islands, 8 of which are listed here.

Plants terrestrial, often climbing; **rhizomes** long creeping; **fronds** mostly indeterminate and pseudodichotomously forked, veins free; **sori** abaxial with 5–15 sporangia, 128–800 spores per sporangium, exindusiate; **spores** globose-tetrahedral or bilateral.

Key to genera

- 1a. Pinnae unforked..... *Diplopterygium*
- b. Pinnae pseudodichotomously forked..... 2
- 2a. Segments absent from the penultimate costae..... *Dicranopteris*
- b. Segments present on the penultimate costae..... *Sticherus*

DICRANOPTERIS BERNH.

Etymology: *dikranos* = forked; *pterus* = fern; referring to the repeatedly forked fronds of the genus.

Description: terrestrial and climbing; rhizomes long creeping, with hairs; pinnae forking repeatedly, with a pair of accessory branches that point basiscopically at each branching point, segments absent from the penultimate costae, veins forked at least twice; sori exindusiate.



DIPLOPTERYGIUM (DIELS) NAKAI

Etymology: *diploos* = double; *pterygium* = little wing; referring to the appearance of their fronds, consisting two wing-like pinnae.

Description: terrestrial and climbing; rhizomes long creeping, scaly; pinnae longer than wide, apical segment elongated, veins forked once or twice; sori several per segment, exindusiate, sporangia 2–5 per sorus.



STICHERUS C.PRESL

Etymology: *stichos* = rows; referring to the arrangement of the sori.

Description: terrestrial and sometimes climbing; rhizomes long creeping, scaly; pinnae dividing repeatedly, ultimate branches simply pinnatifid, segments present on the penultimate costae, veins forked once; sori exindusiate, sporangia 1–7 per sorus.





Plants (SITW11010)



Dormant bud and basiscopically accessory branches (SITW11010)



Abaxial surface of lamina (SITW11010)



Cross section of stipe base (SITW11010)

***Dicranopteris linearis* (Burm.f.) Underw. var. *altissima* Holttum**

Etymology: *altissima* = the tallest; referring to the growth habit.

Diagnostic characters: differs from var. *linearis* by having accessory lateral branches and from var. *montana* by having rusty hairs, especially on young laminae.

Distribution: throughout Malesia and the Solomon Islands; type from Peninsular Malaysia.

Ecology: usually found in lowland forests, sometimes high-climbing.

Note: different varieties are present in the Solomon Islands (Holttum, 1959) but the variation within each and the delimitation among them needs further study.



Habitat (SITW11024)



Stipule-like segments at fork (SITW11024)



Plants (SITW11024)



Sori (SITW11024)

Dicranopteris linearis* (Burm.f.) Underw. var. *linearis

Etymology: *linearis* = linear; presumably referring to the appearance of the segments.

Diagnostic characters: can be distinguished from other varieties by the absence of accessory lateral branches arising from near the ultimate branching points.

Distribution: throughout Paleotropics; type from Sri Lanka.

Ecology: a thicket-forming species with a wide altitude range, but more common in open, lowland habitats.



Habitat (SITW10463)



Sori (SITW10463)



Basiscopically accessory branches (SITW10463)



Adaxial surface of lamina, backlight (SITW10463)

***Dicranopteris linearis* (Burm.f.) Underw. var. *montana* Holttum**

Etymology: *montana* = of mountain; referring to the habitat preference of the species.

Diagnostic characters: differs from var. *linearis* by having accessory lateral branches at the base of the ultimate leaflets, and from var. *altissima* by the glabrous abaxial lamina surface.

Distribution: widely distributed from Asia to Malesia; type from Perak in Malaysia.

Ecology: usually found in forest margins at low- to mid-altitude.

Note: newly recorded for the Solomon Islands.



Plants (SITW11627)

***Diplpterygium clemensiae* (Copel.) Parris**

Etymology: named after the American botanist Mary Strong Clemens who collected the type.

Diagnostic characters: can be distinguished by its pinnae, rachises and segment midveins all being densely scaly.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a rare species confined to ridges at altitudes above 1,000 m.



Stipule-like segments at fork (SITW11627)



Scales on rachis (SITW11627)



Venation (SITW11627)



Adaxial surface of lamina (SITW11627)



Sori (SITW11627)



Habitat (SITW05665)



Stipule-like segments at fork (SITW05665)



Sori (SITW05665)



Adaxial surface of lamina (SITW05665)

***Diplpterygium longissimum* (Blume) Nakai**

Etymology: *longissimum* = the longest; referring to the frond pinnae.

Diagnostic characters: differs from *D. clemensiae* by its glabrous rachises and costae.

Distribution: very widely distributed from Southern China, Indo-China, Malesia to Melanesia; type from Java.

Ecology: an uncommon species found in semi-open areas on ridges above 1,000m.

Note: newly recorded for the Solomon Islands.



Habitat (SITW11008)



Cross section of rhizome (SITW11008)



Venation (SITW11008)



Sori (SITW11646)

***Sticherus hirtus* (Blume) Ching**

Etymology: *hirtus* = hairy; presumably referring to the scales on the fronds and branches.

Diagnostic characters: most similar to *S. oceanicus*, but has toothed segment apices. The fan shaped appearance of the leafy parts also distinguishes it from *S. oceanicus*. *Sticheerus brassii* (C.Chr.) Copel. (not pictured) is also similar, but its segments are at right angles to the axes.

Distribution: Malesia and the Solomon Islands; type from Java.

Ecology: an uncommon species found in semi-open or stunted forests at altitudes of 500–850 m.



Habitat (SITW10462)



Branching pattern (SITW11009)



Stipule-like segments at fork (SITW11009)



Sori (SITW10462)

***Sticherus milnei* (Baker) Ching**

Etymology: named after the Scottish botanist William Milne who collected the type.

Diagnostic characters: resembles *Dicranopteris linearis* and usually shares the same habitat but *S. milnei* differs from *D. linearis* in having lamina segments on the penultimate axes, whereas *D. linearis* lacks segments on the penultimate axes. The c. 90 degree angle between the axes of *S. milnei* distinguishes it from the other *Sticherus* species in the Solomon Islands, except for *S. brassii* (not illustrated), which is a rare species being recorded only on the summit of Mt. Popomanaseu.

Distribution: throughout Malesia, the Solomon Islands, and Vanuatu (type locality).

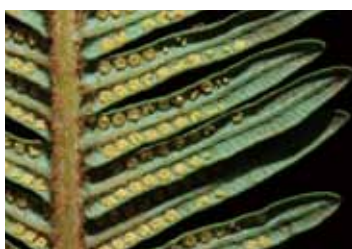
Ecology: a common species found in open areas at altitudes of 500–1,500 m.



Plants (SITW07538)



Adaxial surface of lamina
(SITW07538)



Abaxial surface of lamina
(SITW07538)



Sori (SITW07538)

***Sticherus oceanicus* (Kuhn) Ching**

Etymology: *oceanicus* = growing near the sea; referring to its initial discovery on an oceanic island.

Diagnostic characters: similar to *S. hirtus* but *S. oceanicus* differs from the other *Sticherus* in the entire apex of its segments.

Distribution: the Solomon Islands, Vanuatu (type locality), Fiji, and Samoa.

Ecology: an uncommon mountain forest species found in semi-open forests on ridges at altitudes of 800–1,400 m.

LYGODIACEAE

Lygodiaceae can be easily recognized by its climbing habit and fronds that grow indeterminately. With a fossil record tracing back to the Upper Cretaceous, Lygodiaceae is one of the families of ancient origin. Lygodiaceae is sometimes included in a broadly defined Schizaeaceae together with Anemiaceae. Molecular studies have shown the early divergence of the three families (Wikström & al., 2002; Pryer & al., 2004); consequently, recognition of three separate families is nowadays more widely accepted.

One genus with ca. 40 species worldwide; 5 species in the Solomon Islands, 4 of which are listed here.

Climbing ferns; **rhizomes** creeping, bearing hairs; **fronds** with indeterminate growth, twining and climbing with a wiry rachis, pinnae pseudo-dichotomously divided, fertile and sterile segments dimorphic; **sporangia** borne individually in two rows on marginal lobes of the fertile segments; **spores** trilete, globose.

LYGODIUM Sw.

Etymology: *lygodes* = flexible; referring to the climbing habit.

Description: same as family.





Plant (SITW10470)



Dormant bud (SITW10470)



Sori (SITW10470)



Venation (SITW10470)

***Lygodium circinnatum* (Burm.f.) Sw.**

Etymology: *circinnatum* = curled round, circinate; referring to the climbing habit.

Diagnostic characters: most similar to *L. trifurcatum*, but when fertile, *L. circinnatum* can be distinguished by its undivided fertile pinnules. Sterile plants of *L. circinnatum* can be distinguished by the cuneate (rather than cordate) bases of the leaflets.

Distribution: widely distributed in Asia, Malesia, and the Pacific Islands; type from Java.

Ecology: a common lowland species usually found in open places like roadsides and forest margins, below 300 m.



Plants (SITW10469)



Dormant bud (SITW10469)



Sori (SITW10469)



Venation (SITW10469)

***Lygodium microphyllum* (Cav.) R.Br.**

Etymology: *micro* = small; *phyllum* = leaf; referring to the small pinna segments.

Diagnostic characters: the free veins distinguish this species from *L. reticulatum* which has reticulate veins.

Distribution: widely distributed from Africa, Asia, Malesia, Australia, and the Pacific Islands; type from Luzon.

Ecology: an uncommon species found in open ground and edges of secondary or coastal forests, in the lowlands below 300 m.



Plants (SITW11042)



Dormant bud (SITW11042)



Sori (SITW11042)



Venation (SITW11042)

***Lygodium reticulatum* Schkuhr**

Etymology: *reticulatum* = reticulate; referring to the reticulate venation.

Diagnostic characters: similar to *L. microphyllum* when juvenile, but can be distinguished by having reticulate venation and plants are much larger when mature.

Distribution: Australia and the Pacific Islands; type from unknown locality.

Ecology: a rare lowland species only known from Santa Cruz Islands, but common there.



Plant (SITW03341)



Dormant bud (SITW10471)



Sori (SITW10471)



Venation (SITW10471)

***Lygodium trifurcatum* Baker**

Etymology: *trifurcatum* = three-forked, divided into three equal parts; referring to the morphology of the pinnae.

Diagnostic characters: this could be confused with *L. circinnatum* but differs by having cordate (rather than cuneate) leaflet bases and more divided fertile pinnules.

Distribution: New Guinea, the Solomon Islands (type locality), and Vanuatu.

Ecology: a common lowland species that extends to mid-elevations, found in open ground and forest margins, climbing on other plants.

SCHIZAEACEAE

Schizaeaceae is a fern family of ancient origin, with the earliest fossil record from the Cretaceous. Molecular phylogenetic studies have shown the common origin of Schizaeaceae with Anemiaceae and Lygodiaceae. Although these three families are sometimes included in a broadly circumscribed Schizaeaceae, the early divergence time and morphological differences justify the separation of the three families (Wikström & al., 2002; Pryer & al., 2004).

Two genera with ca. 35 species worldwide; 2 genera and 6 species in the Solomon Islands, 5 of which are listed here.

Plants terrestrial; **rhizomes** short creeping or forming a tuber; **fronds** simple or dichotomously forked, grass-like, veins free; **sori** on comb-like or digitate structure at blade tips, sporangia with apical annulus, 128–256 spores per sporangium, exindusiate; **spores** monolete.

Key to genera

- 1a. Fronds simple or forked, sori on comb-like structure..... *Schizaea*
- b. Fronds simple, sori on digitate structure..... *Actinostachys*

ACTINOSTACHYS WALL.

Etymology: *actino* = ray; *stachy* = spike-like; referring to the digitate fertile structure.

Description: terrestrial; rhizomes short creeping or forming a tuber; fronds simple with digitate fertile structure at their apex.



SCHIZAEA SM.

Etymology: *schizein* = split; referring to the incised comb-like fertile structure.

Description: terrestrial; rhizomes short creeping; fronds simple or forked dichotomously, comb-like fertile structure at the blade's apex.





Plants (SITW11035)



Rhizome (SITW11035)



Sori (SITW07592)



Young frond (SITW07592)

***Actinostachys digitata* (L.) Wall.**

Etymology: *digitata* = digitate; referring to its digitate fertile structure.

Diagnostic characters: this species can be easily identified by its unbranched, grass-like fronds, with digitate fertile structure at the apex.

Distribution: widely distributed in tropical Asia, Malesia, and the Pacific Islands; type from Sri Lanka.

Ecology: an uncommon, small fern usually found on dry slopes near ridges in lowland forests below 600 m.



Plant (SITWo1059)



Rhizome (SITWo4884)



Sori (SITWo4884)



Digitate fertile structure (SITWo3032)

***Actinostachys wagneri* (Selling) C.F.Reed**

Etymology: named after the American botanist Warren Herbert Wagner, who collected the type.

Diagnostic characters: a very distinct fern with its narrow linear fronds (less than 0.7 mm wide).

Distribution: Malesia, Australia, and the Solomon Islands; type from Papua New Guinea.

Ecology: a rare species known in the Solomon Islands only from Western Province. Hard to be found because of its minute size. Usually found on slopes near ridges at altitudes of 500–1,300 m.

Note: newly recorded for the Solomon Islands.



Plants (SITW00392)



Rhizome (SITW10597)



Fertile part (SITW10597)



Fertile part, old (SITW05695)

***Schizaea biroi* Richter**

Etymology: named after the Hungarian naturalist Lajos Biró who collected the type.

Diagnostic characters: can be distinguished from *S. dichotoma* by its smaller plant size and narrower ultimate branches (ca. 1 mm wide); and from *Schizaea* sp. by having green rather than red-colored fronds.

Distribution: Asia (Taiwan and Japan), Malesia, and the Solomon Islands; type from New Guinea.

Ecology: a common, small fern usually found on slopes near ridges in lowland forests below 600 m.

Note: newly recorded for the Solomon Islands. This species is sometimes recognized as a synonym of *S. dichotoma*. Here we follow Kuo & Wang (1986) who recognizing both *S. biroi* and *S. dichotoma*, but further study is needed to clarify their relationship.



Plants (SITW00484)



Rhizome (SITW11034)



Fertile part (SITW11034)



Frond (SITW11034)

***Schizaea dichotoma* (L.) J.Sm.**

Etymology: *dichotoma* = divided into two equal portions; referring to the dichotomously forked fronds.

Diagnostic characters: the larger plant size and wider ultimate branches (ca. 2 mm wide) separate it from other *Schizaea* in the Solomon Islands.

Distribution: Asia, Malesia, Australia, New Zealand, and the Pacific Islands; type from China.

Ecology: the most common species of the family with a very wide range of habitats, and at altitudes of 0–1,600 m.

Note: this is one of the 3 species of the *S. dichotoma* complex in the Solomon Islands. Further study is needed to clarify their relationship.



Plant (SITWo7594)



Rhizome (SITWo7594)



Fertile part (SITWo7594)



Fertile part, old (SITWo7594)

***Schizaea* sp.**

Diagnostic characters: similar to *S. biroi* but the fronds of this species are red-colored and more slender.

Ecology: shares the same habitat as *S. biroi* but is less common.

Note: this is one of the 3 species of the *S. dichotoma* complex in the Solomon Islands. Further study is needed to clarify their relationship.

DICKSONIACEAE

Dicksoniaceae is a tree fern family with most species in the forests of the Southern Hemisphere. Most species are notable for their trunk-like rhizomes. Unlike the other principal tree fern family, Cyatheaceae, the species of Dicksoniaceae bear only hairs and never have scales. Sori are usually marginal in Dicksoniaceae but away from the margin in Cyatheaceae. Recent evidence from molecular phylogenetic studies further supports the monophyly of both families (Korall & al., 2006; Schuettpelz & Pryer, 2007; Adjie & Lestari, 2014).

Three genera with ca. 35 species worldwide; 2 genera and 3 species in the Solomon Islands.

Plants terrestrial; **rhizomes** mostly arborescent or erect, or ascending, covered with uniseriate hairs; **fronds** large, monomorphic or dimorphic, 2–3 pinnate, veins simple to forked, free; **sori** abaxial and exindusiate in *Lophosoria* or marginal and indusiate in *Calochlaena* and *Dicksonia*, indusia bivalvate or cup-shaped; **spores** globose or tetrahedral, trilete.

Key to genera

- 1a. Rhizome erect, tree like..... *Dicksonia*
- b. Rhizome ascending..... *Calochlaena*

CALOCHLAENA (MAXON) M.D.TURNER & R.A.WHITE

Etymology: *kalos* = beautiful; *claina* = cloak; referring to the distinctive character of the delicate true indusium.

Description: terrestrial; rhizomes ascending with red-brown hairs; fronds 4-pinnate; sori in marginal cups, indusium and lamina margin forming a sphere.



DICKSONIA L'HER.

Etymology: named after the English botanist James Dickson.

Description: terrestrial; rhizomes erect; fronds large, 3-pinnate, elliptic in outline; sori protected by a sphere formed by the cupped lobe margin and the indusium.





Plants (SITW0757)

***Calochlaena straminea* (Labill.) M.D.Turner & R.A.White**

Etymology: *straminea* = straw-colored; referring to the color of the distal part of the stipe.

Diagnostic characters: has finely divided fronds and lacks a trunk. The hairs are very similar in color and shape to those of *Dicksonia sciurus*.

Distribution: the Philippines, New Guinea, the Solomon Islands, Vanuatu, New Caledonia (type locality), Fiji, and Samoa.

Ecology: an uncommon terrestrial fern usually found in open habitats of mid-altitude montane forests (500–1,500 m).



Stipe bases (SITW10485)



Sori (SITW0757)



Cross section of stipe base (SITW10485)



Venation (SITW10485)



Young frond (SITW07570)



Habitat (SITW04894)



Stipe base (SITW07574)



Sori (SITW04894)



Adaxial side of sterile pinnules (SITW07574)

***Dicksonia brackenridgei* Mett.**

Etymology: named after the American botanist William Dunlop Brackenridge who collected the type.

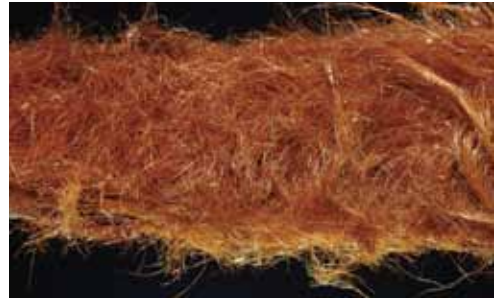
Diagnostic characters: this species can be easily identified by its whitish matted, woolly hairs on the base of stipes.

Distribution: the Solomon Islands, Vanuatu, Fiji (type locality), Samoa, and American Samoa.

Ecology: a high mountain tree fern species usually found above 1,300 m, less common than *D. sciurus*.



Habitat (SITW04896)



Stipe base (SITW11624)



Sori (SITW11624)



Adaxial surface of pinnules (SITW11624)

***Dicksonia sciurus* C.Chr.**

Etymology: *sciurus* = like a squirrel's tail; referring to the red hairs like those of a red squirrel's tail.

Diagnostic characters: very distinct by the stiff, red-brown hairs on its stipe bases.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon tree fern growing on open ridges and summits above 1,000 m.

CYATHEACEAE

Cyatheaceae is the largest family of tree ferns and is distinguished from the Dicksoniaceae by the presence of scales on the stems and stipes. Fossils of the family can be traced back to the Jurassic or early Cretaceous and the extant species mostly occur in tropical or southern temperate areas. The division of the family into several genera is still controversial despite several phylogenetic studies having been conducted (Korall & al., 2007; Janssen & al., 2008).

Three genera with ca. 643 species worldwide; 3 genera and ca. 18 species in the Solomon Islands, 10 of which are listed here.

Plants terrestrial, large to very large, less often medium-sized; **stems** erect (as trunks), apices covered with large scales, sometimes also with hairs; **fronds** usually large (to 5 m long), 1- to 3-pinnate (rarely simple), veins mostly simple or forked, free; **sori** abaxial or sometimes marginal, rounded, exindusiate, or variously indusiate; **spores** tetrahedral, trilete.

Cyatheaceae

Key to genera

- 1a. Stipe scales without differentiated margin (cells smaller and of different orientation) *Sphaeropteris*
- b. Stipe scales with differentiated margin (visible under magnifying glass)..... 2
- 2a. Stipe scales without apical seta (a thick-walled cell)..... *Cyathea*
- b. Stipe scales with apical seta (visible under magnifier)..... *Alsophila*

ALSOPHILA R.Br.

Etymology: *alsophilus* = grove-loving; referring to the growth habit of some species of the genus.

Description: terrestrial; stems erect, tree-like; stipe scales with a differentiated margin and apical seta.



CYATHEA Sm.

Etymology: *kyathos* = wine cup; referring to the indusium shape of some species.

Description: terrestrial; stems erect, tree-like; stipe scales with a differentiated margin but without apical seta.



SPHAEROPTERIS BERNH.

Etymology: *sphaero* = globular; *pteris* = fern; referring to the indusium shape of some species.

Description: terrestrial; stems erect, tree-like; stipe scales conform, without a differentiated margin.





Habitat (SITW07630)



Spiny stipe (SITW11584)



Scales on stipe base (SITW11584)



Sori and bullate scales (SITW07630)

***Alsophila alta* (Copel.) R.M.Tryon**

Etymology: *alta* = tall; referring to the trunk of the species.

Diagnostic characters: can be distinguished by its spiny and bi-colored stipes; the adaxial and abaxial sides of stipes are green and brown, respectively.

Distribution: the Solomon Islands (type locality), Fiji, and Samoa.

Ecology: an uncommon tree fern found in damp forests at altitudes of 20–700 m, sometimes in groups.



Plant (SITW04929)



Stipe bases (SITW04928)



Scales on stipe base (SITW07547)



Sori (SITW07547)

***Alsophila archboldii* (C.Chr.) R.M.Tryon**

Etymology: named after the American zoologist Richard Archbold who was the leader of the Fly River Expedition of the American Museum of Natural History.

Diagnostic characters: distinguished by the combination of cup-shaped indusia and light brown stipe scales.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a rare tree fern only known from Western Province in mountain forests at altitudes of 1,000–1,500 m.



Plant (SITW07571)



Skeletonised pinnae
(SITW04015)



Scales on stipe base
(SITW07571)



Sori (SITW05626)

***Alsophila hornei* Baker**

Etymology: named after the Scottish botanist John Horne who collected the type.

Diagnostic characters: easily separated from the other tree ferns by having skeletonised pinnae at the base of the stipes and reduced fertile pinnae that are only found in the proximal half of the fronds.

Distribution: New Guinea, the Solomon Islands, and Fiji (type locality).

Ecology: the most common tree fern on mountain ridges at altitudes of 700–1,700 m, usually accompanied by *Dicksonia sciurus*.



Plants (SITW07576)



Stipe bases (SITW04927)



Scales on stipe base (SITW07576)



Sori (SITW07576)

***Alsophila rigens* (Rosenst.) R.M.Tryon**

Etymology: *rigens* = rigid; presumably referring to its persistent indusia.

Diagnostic characters: can be distinguished by its cup-shaped indusia and spreading light brown stipe scales.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a rare species known only from Kolombangara at high altitudes above 1,300 m.

Note: newly recorded for the Solomon Islands.



Habitat (SITW11595)



Scales on stipe (SITW11595)



Sori (SITW11595)



Venation (SITW11595)

***Alsophila solomonensis* (Holtum) R.M.Tryon**

Etymology: *solomonensis* = from the Solomon Islands, where the type was collected.

Diagnostic characters: this tree fern could be confused with *Sphaeropteris brackenridgei* but differs by having uniformly brown stipe scales (without a pale margin); the pinnae are sometimes reduced along the stipe close to the base.

Distribution: endemic to the Solomon Islands.

Ecology: a very common tree fern growing in lowland to montane forests at altitudes of 50–1,500 m, on hillslopes and valleys, preferring damper shady sites.



Habitat (SITW11083)

Scale on stipe base
(SITW07546)

Sori (SITW07546)



Adaxial surface of lamina (SITW11083)

***Cyathea decurrens* (Hook.) Copel.**

Etymology: *decurrens* = extending downwards; referring to the frond segments being decurrent.

Diagnostic characters: this is the only known species of the genus in the Solomon Islands and can be easily distinguished by its very broad, glossy stipe scales. The slender trunk, deeply lobed ultimate pinnules, and soft texture are also unique for the family within the Solomon Islands.

Distribution: throughout the Pacific Islands; type from Fiji.

Ecology: a rare species found in montane forests at altitudes of 600–1,200 m, usually near streams.



Habitat (SITW10461)



Stipe bases (SITW10461)



Scales on stipe base (SITW10461)



Sori (SITW10461)

***Sphaeropteris brackenridgei* (Mett.) R.M.Tryon**

Etymology: named after the Scottish botanist William Dunlop Brackenridge, who collected the type.

Diagnostic characters: *S. brackenridgei* could be confused with *Alsophila solomonensis* whose fronds also have reduced pinnae along the stipe, but is distinguished from the latter by having stipe scales with pale margins.

Distribution: endemic to the Solomon Islands.

Ecology: the most common lowland tree fern in the Solomon Islands, usually found below 1,300 m.



Habitat (SITW10549)



Cross section of stipe (SITW10549)



Scales on stipe base (SITW10549)



Sori (SITW10549)

***Sphaeropteris lunulata* (G.Forst.) R.M.Tryon**

Etymology: *lunulata* = crescent-moon shaped; referring to the pinnule shape.

Diagnostic characters: like *S. vittata*, exindusiate and the stipe scales are pale, but *S. lunulata* can be distinguished by having narrower stipe scales (ca. 1 mm wide) and less abundant bullate scales on the abaxial side of the pinnule segments.

Distribution: New Guinea and the Pacific Islands; type from French Polynesia.

Ecology: one of the most common of the pale-scaled species of Cyatheaceae in the Solomon Islands at lowland forests below 850 m.



Habitat (SITW04975)



Stipe base (SITW11654)



Scales on stipe base (SITW07582)



Sori (SITW11654)

***Sphaeropteris truncata* (Brack.) R.M.Tryon**

Etymology: *truncata* = blunt-ended; referring to the pinnule shape.

Diagnostic characters: resembling *S. aciculosa* (Copel.) R.M.Tryon (not pictured) in having oblong segments, but can be separated by the pale and narrow scales on stipes.

Distribution: the Solomon Islands, Fiji (type locality), and Samoa.

Ecology: an uncommon tree fern found in lowland to mountain forests at altitudes of 300–950 m.

Note: scales are dense at the base of the stipe but end abruptly.



Habitat (SITW11651)

***Sphaeropteris vittata* (Copel.) R.M.Tryon**

Etymology: *vittata* = striped lengthwise; relationship to the species is unclear.

Diagnostic characters: resembling *S. lunulata*, but distinguished by having broader stipe scales (ca. 3 mm) and more abundant bullate scales on the abaxial side of the pinnule segments, even on the veinlets.

Distribution: Papua New Guinea (Bougainville) and the Solomon Islands (type locality).

Ecology: a common tree fern found in lowland to montane forests at altitudes of 0–1,230 m, usually growing in open habitat.



Scales on stipe base (SITW11651)



Abaxial surface of lamina (SITW06841)



Toothed scale margins (SITW06841)



Adaxial surface of lamina, backlight (SITW11651)



Sori (SITW05725)

SACCOLOMATACEAE

Saccolomataceae is a small, pantropical family with only one genus. Traditionally the species from Asia, Malesia, and the Pacific Islands were placed in another genus, *Orthiopteris*; however, due to their similar morphology, only one genus is accepted by PPG I (Pteridophyte Phylogeny Group I). Additional study is needed to confirm the monophyly of the genus. The family was thought to be close to Dennstaedtiaceae but molecular evidence suggests an affinity with Cystodiaceae (Lehtonen & al., 2010).

One genus with ca. 18 species worldwide; 1 species (variety) in the Solomon Islands.

Plants terrestrial; **rhizomes** short creeping to erect; **fronds** pinnate to more divided, glabrous or hairy (hairs not articulated), veins free; **sori** terminal on veins, indusia pouch- or cup-shaped; **spores** globose, tetrahedral.

SACCOLOMA KAULF.

Etymology: *saccus* = bag; *loma* = border; referring to the marginal sori that are located in a sac-like indusium.

Description: terrestrial; rhizomes erect; fronds medium to large, 3- to 4-pinnate, deltoid, veins free; sori on vein ends, protected by both an outer indusium and an inner indusium.





Habitat (SITW10433)



Stipe bases (SITW10433)



Sori (SITW06844)



Adaxial surface of pinnules (SITW10433)

Saccoloma campylurum* (Kunze) Mett. var. *insulare* (P.H.Hovenkamp & T.T.Luong) C.W.Chen, *comb. nov.

Basionym: *Orthiopteris campylura* (Kunze) Copel. var. *insularis* P.H.Hovenkamp & T.T.Luong, *PhytoKeys* 53: 52. 2015.

Etymology: *kampylos* = curved; *insularis* = growing on islands; referring to the curved apices of the pinnae/pinnules and the distribution of the variety on archipelagos, respectively.

Diagnostic characters: differs from other varieties in having sori not wider than 0.6 mm and a lobed inner indusium.

Distribution: Papua New Guinea (Bougainville), the Solomon Islands (type locality), and Vanuatu.

Ecology: a common species usually found in submontane forests on ridges and hillslopes at altitudes of 300–1,200 m.

CYSTODIACEAE

Cystodiaceae is a monogeneric family with only a single species, distributed from Borneo to the Solomon Islands. The phylogenetic position of *Cystodium* had been considered to be closely related to *Dicksonia*. However, there are significant differences in their stipe anatomy justifying the elevation of *Cystodium* to the rank of family.

One genus with 2 geographically separated subspecies, 1 subspecies in the Solomon Islands.

Plants terrestrial; **rhizomes** erect, covered by golden hairs; **fronds** monomorphic, 1- to 2-pinnate, glabrous or with pale stiff hairs, texture thick, veins free, simple or forked; **sori** marginal, terminal on the veins, protected by a reflexed lobe of the lamina (false indusium) and a thinner true indusium; **spores** globose, trilete, granular.

CYSTODIUM J.SM.

Etymology: *kyste* = bladder; *odous* = tooth; referring to the form of its indusia.

Description: same as family.





Plant (SITWo4998)



Golden hairs and cross section of stipe base (SITW10442)



Sori (SITWo7685)



Venation (SITW10442)

***Cystodium sorbifolium* (Sm.) J.Sm. subsp. *solomonense* J.R.Croft**

Etymology: *Sorbus* = a genus of flowering plants that has a pinnate leaf; *folium* = leaf; *solomonense* = from the Solomon Islands; referring to the similarity of its fronds to *Sorbus* and the distribution of the subspecies, respectively.

Diagnostic characters: easily identified by the golden hairs at the stipe bases. The plants from Bougainville and the Solomon Islands represent a distinct subspecies distinguished by its glabrous costae and costules.

Distribution: this subspecies reported only from Bougainville and the Solomon Islands (type locality).

Ecology: a common lowland species on hillslopes and in gullies below 500 m.

LINDSAEACEAE

Traditionally, Lindsaeaceae was thought to have a close affinity with Dennstaedtiaceae, and was sometimes included within it. Recent molecular phylogenetic studies suggest the recognition of two families based on the principle of monophyly (Lehtonen & al., 2010; Rothfels & al., 2015). Related to Lindsaeaceae are two small families; i.e., Cystodiaceae and Lonchitidaceae.

Seven genera with ca. 234 species worldwide; 4 genera and about 30 species in the Solomon Islands, 24 of which are listed here.

Plants terrestrial, or sometimes rupestral or epiphytic; **rhizomes** short to long creeping, bearing scales and/or hairs; **fronds** 1- to 3-pinnate or more divided, mostly glabrous, veins usually free, if reticulate without included veinlets; **sori** marginal or submarginal, indusiate, opening towards the margin; **spores** monolete or trilete.

Key to genera

- 1a. Indusium laterally free, ultimate segments dimidiate..... 2
- b. Indusium laterally entirely or largely adnate to the lamina, ultimate segments not dimidiate..... 3
- 2a. Spores trilete..... *Lindsaea*
- b. Spores monolete..... *Osmolindsaea*
- 3a. Ultimate segments more or less triangular..... *Odontosoria*
- b. Ultimate segments not triangular..... *Tapetidium*

LINDSAEA DRYAND.

Etymology: named after John Lindsay, a botanist of Jamaica.

Description: terrestrial, epiphytic, or rupestral; rhizomes short to long creeping; fronds 1- to 2-pinnate, ultimate segments dimidiate; sori indusiate, opening to the margin, spores trilete.



ODONTOSORIA FÉE

Etymology: *odontos* = toothed; *soros* = sorus; referring to the toothed indusia of the genus.

Description: terrestrial or rupestral; rhizomes short creeping; fronds 3-pinnate or more divided, ultimate segments triangular; sori indusiate, opening to the margin, spores monolete.



OSMOLINDSAEA (K.U.KRAMER) LEHTONEN & CHRISTENH.

Etymology: *osme* = scent; *lindsaea* = fern genus *Lindsaea*; referring to the smell of some species after drying.

Description: rheophytic, less often terrestrial or rupestral; rhizomes short to long creeping; fronds pinnate, ultimate segments dimidiate; sori indusiate, spores monolete.



TAPEINIDIUM (C.PRESL) C.CHR.

Etymology: *tapeinos* = small, dwarf, *idium* = resembling; referring to the small size of the sori in the genus.

Description: terrestrial; rhizomes very short creeping; fronds pinnate or more divided; sori indusiate, indusia attached at both the base and sides, spores monolete.





Habitat (SITW11039)



Plants (SITW11039)



Rhizome (SITW11039)



Sori (SITW11039)

***Lindsaea agatii* (Brack.) Lehtonen & Tuomisto**

Etymology: named after the American artist A. T. Agate who joined the United States Exploring Expedition to the Pacific.

Diagnostic characters: differs from *L. ensifolia* by the distal pinnae being gradually and strongly shortened.

Distribution: throughout the Pacific Islands; type from Fiji.

Ecology: an uncommon terrestrial species growing in open, lowland places.

Note: this species used to be recognized as a subspecies of *L. ensifolia*, but Lehtonen & al. (2010) recognized *L. agatii* as a separate species based on molecular phylogenetic evidence.



Plants (SITW04953)



Frond base (SITW04953)



Sori (SITW04953)



Adaxial surface of lamina (SITW04953)

***Lindsaea brevipes* Copel.**

Etymology: *brevipes* = short-stalked; referring to the short stipes.

Diagnostic characters: can be distinguished by its long, narrow pinnate fronds, with gradually reduced basal pinnae.

Distribution: Moluccas, New Guinea (type locality), the Solomon Islands, and Palau.

Ecology: an uncommon terrestrial species found near ridges and valleys of lowland and mid-altitude forests below 700 m.

Note: this species is sometimes identified as *Lindsaea lucida* Blume subsp. *brevipes* (Copel.) K.U.Kramer, but Lehtonen & al. (2010) showed that *L. brevipes* is more closely related to *L. lapeyrousii* than *L. lucida*.



Plants (SITW11171)



Lamina base (SITW11171)



Rhizome (SITW11171)



Sori (SITW11171)

***Lindsaea chrysolepis* K.U.Kramer**

Etymology: *chryso* = golden; *lepis* = scales; referring to the color of the rhizome scales.

Diagnostic characters: resembling *L. salomonis* but the pinnae of *L. chrysolepis* are less numerous (28–33, not 30–45) and oblong rather than triangular.

Distribution: Papua New Guinea (Bougainville), the Solomon Islands (type locality), and Vanuatu.

Ecology: a rare epiphyte found in very humid gullies of mountain forests at altitudes of 700–1,700 m.



Habitat (SITW11102)



Adaxial surface of pinna, backlight (SITW11102)



Plants (SITW11102)



Rhizome (SITW11102)

***Lindsaea ensifolia* Sw.**

Etymology: *ensis* = sword; *folia* = frond; referring to the shape of the pinnae.

Diagnostic characters: very distinct by its imparipinnate fronds (with a terminal leaflet of similar size to the lateral leaflets) and should not be confused with any other congeneric species in the Solomon Islands.

Distribution: widely distributed in the Old World; type from Mauritius.

Ecology: an uncommon species growing in grasslands and open forests below 300 m.



Habitat (SITW10506)

***Lindsaea gueriniana* (Gaudich.) Desv.**

Etymology: named after the French botanist J. X. B. Guérin.

Diagnostic characters: can be easily distinguished by its long, narrow pinnate fronds and very thick laminae.

Distribution: Malesia, the Solomon Islands, Fiji, and Tahiti; type from Moluccas.

Ecology: a rare terrestrial species growing on coastal or ultrabasic rocks in the lowlands.



Plants (SITW10506)



Rhizome (SITW10506)



Adaxial surface of lamina (SITW10506)



Sori (SITW10506)



Venation (SITW10506)



Plants (SITW11666)



Rhizome (SITW11666)



Sori (SITW11666)



Venation (SITW11666)

***Lindsaea jarrettiana* K.U.Kramer**

Etymology: named after the English botanist Frances Mary Jarrett who made available what became the type material.

Diagnostic characters: a very distinct small *Lindsaea* with pinnate fronds and conform apical pinnae.

Distribution: endemic to the Solomon Islands.

Ecology: a rare epiphyte usually growing on tree ferns (*Dicksonia sciurus*) near ridges in mossy forests at altitudes of 1,200–1,500 m.



Habitat (SITW10602)



Rhizome and basal part of plant (SITW10602)



Sori (SITW10602)



Abaxial surface of lamina, backlight (SITW10602)

Lindsaea lapeyrousii* (Hook.) Baker subsp. *lapeyrousii

Etymology: named after the French botanist Philippe Picot de Lapeyrouse who died in a shipwreck at Vanikoro in 1788.

Diagnostic characters: can be easily recognized in the field by its very short creeping rhizomes and deeply incised pinnate fronds.

Distribution: New Guinea and the Solomon Islands (type locality).

Ecology: a rare species only recorded from Vanikoro, growing on slopes in damp valleys below 500 m.

Note: another subspecies, subsp. *fijiensis* Kramer was described from Fiji and distinguished by having narrower pinnules (< 5 mm wide).



Plants (SITW03954)



Rhizome (SITW03954)



Sori (SITW03954)



Adaxial surface of lamina (SITW03954)

***Lindsaea microstegia* Copel.**

Etymology: *micro* = small; *stegia* = covers; referring to the obscure indusia of the species.

Diagnostic characters: could be confused with *L. rigida* which is similarly a 2-pinnate epiphyte. However, *L. microstegia* differs in its sori not reaching the margins and in having softer laminae.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a rare epiphyte found in moist forests at altitudes of 700–1,000 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW11077)



Adaxial surface of lamina (SITW11136)



Rhizome (SITW11136)



Sori (SITW11077)

***Lindsaea obtusa* J.Sm.**

Etymology: *obtusa* = blunt; referring to the pinnule lobes.

Diagnostic characters: differs from *L. pacifica* by having more deeply incised pinnules (incisions past the base of the sori). Sometimes difficult to separate from *L. harveyi* Carruth. (not shown here), but the lobes of the pinnae in *L. obtusa* point more or less toward the frond apex rather than in different directions.

Distribution: widely distributed in Asia, Malesia, Australia, and the Pacific Islands; type from Peninsular Malaysia.

Ecology: an uncommon species usually growing in damp forests at altitudes of 0–1,650 m.

Note: Kramer (1967) suggested *L. obtusa* and *L. harveyi* should perhaps be treated as two subspecies.



Plants (SITW11578)

***Lindsaea pacifica* K.U.Kramer**

Etymology: *pacifica* = Pacific; referring to the distribution of the species.

Diagnostic characters: similar to *L. obtusa* and *L. harveyi*, but *L. pacifica* differs in having more shallowly incised pinnules (incisions not extending past the base of the sori) and more strongly reduced distal pinnules.

Distribution: the Solomon Islands, Vanuatu, Fiji (type locality), Samoa, and Tahiti.

Ecology: a very common terrestrial species in lowland forests below 1,100 m.



Rhizome (SITW11081)



Pinna bases (SITW11081)



Pinna apex (SITW11081)



Sori (SITW11578)



Cross section of stipe (SITW11081)



Plants (SITWo4013)

***Lindsaea repens* (Bory) Thwaites var. *cheilosora* K.U.Kramer**

Etymology: *repens* = creeping; *cheilo* = lipped; *sora* = sori; referring to the creeping habit and the sorus shape, respectively.

Diagnostic characters: differs from var. *sessilis* by having straight indusium bases.

Distribution: Papua New Guinea, the Solomon Islands (type locality), Vanuatu, and Samoa.

Ecology: a rare epiphyte found in humid forests at altitudes of 300–1,000 m.



Frond base (SITW11674)



Rhizome (SITW11674)



Adaxial surface of lamina (SITW11674)



Abaxial surface of lamina, backlight (SITW11674)



Sori (SITW11674)



Plants (SITW10423)



Frond base (SITW11062)



Rhizome (SITW11062)



Sori (SITW10423)

***Lindsaea repens* (Bory) Thwaites var. *sessilis* (Copel.) K.U.Kramer**

Etymology: *repens* = creeping; *sessilis* = attached without a distinct stalk; referring to the creeping habit and sessile pinnules, respectively.

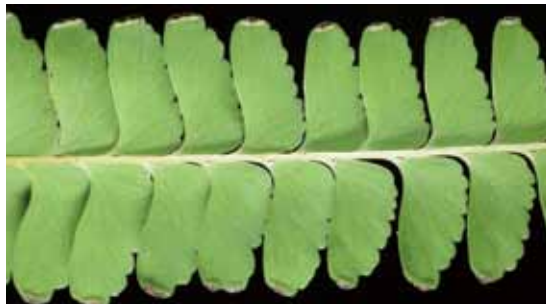
Diagnostic characters: distinguished from var. *cheilosora* by having indusia with a very concave base and from var. *pectinata* (Blume) Mett. ex Kuhn (not shown here) by having marginal sori.

Distribution: New Guinea (type locality), the Solomon Islands, Fiji, and Samoa.

Ecology: a common epiphyte found in lowland to mountain forests below 1,000 m.



Plants (SITW 13231, photographed by T.-C. Hsu)



Abaxial surface of lamina (SITW 13231, photographed by T.-C. Hsu)



Adaxial surface of lamina (SITW 13231, photographed by T.-C. Hsu)



Rhizome (SITW 13231, photographed by T.-C. Hsu)

***Lindsaea rigida* J.Sm.**

Etymology: *rigida* = stiff; referring to the frond texture.

Diagnostic characters: can be distinguished by epiphytic habit, 2-pinnate fronds, and sori reaching the margin.

Distribution: throughout Malesia and the Pacific Islands; type from Peninsular Malaysia.

Ecology: an uncommon high epiphyte found in mountain forests at altitudes of 500–2,000 m.



Plants (SITW11669)

***Lindsaea salomonis* K.U.Kramer**

Etymology: *salomonis* = from the Solomon Islands, where the type was collected.

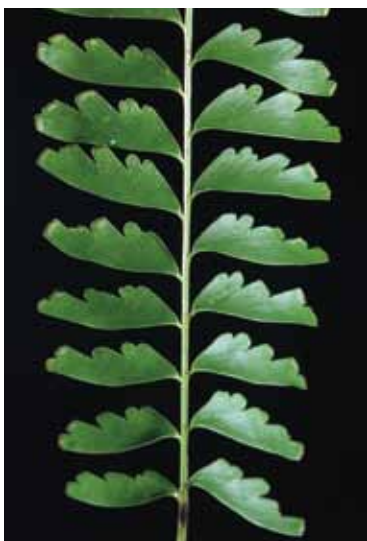
Diagnostic characters: could be confused with *L. chrysolepis* and *L. pulchra* Carruth. (not shown here) but differs in having more deeply incised pinnae (to 1/3 of the pinnae).

Distribution: endemic to the Solomon Islands.

Ecology: an uncommon epiphyte found in montane forests at altitudes of 800–1,800 m.



Rhizome (SITW11669)



Proximal lamina (SITW11669)



Sori (SITW11669)



Frond apex (SITW11669)



Venation (SITW11669)



Plants (SITW01125)



Rhizome (SITW10420)



Sori (SITW07687)



Cross section of stipe (SITW10420)

***Lindsaea tetragona* K.U.Kramer**

Etymology: *tetragona* = four-angled; referring to the shape of the stipe in transverse section.

Diagnostic characters: can be distinguished by the 2-pinnate fronds and deeply incised pinnules.

Distribution: Malesia and the Pacific Islands; type from Moluccas.

Ecology: a common terrestrial species found in lowland forests below 550 m.



Plants (SITW10600)



Basal part of lamina (SITW11011)



Rhizome (SITW11011)



Frond apex (SITW11011)

***Lindsaea vitiensis* K.U.Kramer**

Etymology: *vitiensis* = from Viti Levu in Fiji, where the type was collected.

Diagnostic characters: similar to *L. chrysolepis* but can be distinguished by smaller plant size and rectangular-falcate pinnae (rather than oblong).

Distribution: the Solomon Islands and Fiji (type locality).

Ecology: a rare species (but locally common in Vanikoro), usually growing on rocks or trees in mossy forests at altitudes of 600–800 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW10605)

***Lindsaea* sp.**

Diagnostic characters: sharing the character of concave indusium base with *L. repens* var. *sessilis* but distinguished by having intra-marginal sori.

Ecology: a rare epiphyte only found in mossy forests of Vanikoro at ca. 600 m.

Note: this is a member of the *L. repens* complex and might be an undescribed variety distinguished by having concave indusium bases and reddish rachises.



Rhizome (SITW10605)



Adaxial surface of lamina (SITW10605)



Lamina base (SITW10605)



Venation (SITW10605)



Sori (SITW10605)



Habitat (SITW11046)



Rhizome (SITW11046)



Sori (SITW11046)



Adaxial surface of lamina, backlight (SITW11046)

***Odontosoria chinensis* (L.) J.Sm.**

Etymology: *chinensis* = from China, where the type was collected.

Diagnostic characters: can be distinguished from the other *Odontosoria* species in the Solomon Islands by much smaller plant size and narrow frond segments.

Distribution: widely distributed in both tropics and subtropics of the Old World; type from China.

Ecology: a rare lithophyte growing on boulders along rivers at low altitudes.

Note: newly recorded for the Solomon Islands.



Habitat (SITW10502)



Rhizome (SITW10502)



Abaxial surface of lamina
(SITW10502)



Venation (SITW10502)

***Odontosoria deltoidea* (C.Chr.) Lehtonen & Tuomisto**

Etymology: *deltoidea* = triangular-shaped; referring to the frond shape.

Diagnostic characters: can be distinguished from *O. retusa* by having 2-pinnate laminae (rather than 3-pinnate) and very thick texture.

Distribution: Papua New Guinea, the Solomon Islands, New Caledonia (type locality), and Vanuatu.

Ecology: a rare terrestrial only recorded on ultrabasic soil of Isabel.



Plants (SITW10487)

***Odontosoria retusa* (Cav.) J.Sm.**

Etymology: *retusa* = retuse, shallowly indented; referring to the shape of ultimate pinnules.

Diagnostic characters: differs from the other congeneric species *O. deltoidea* in having 3-pinnate laminae (rather than 2-pinnate).

Distribution: Malesia, the Solomon Islands, and Vanuatu; type from Luzon in the Philippines.

Ecology: an uncommon lithophyte found in forest margins and open ground below 400 m, usually near rivers.



Cross section of rhizome (SITW10487)



Scales on stipe (SITW10487)



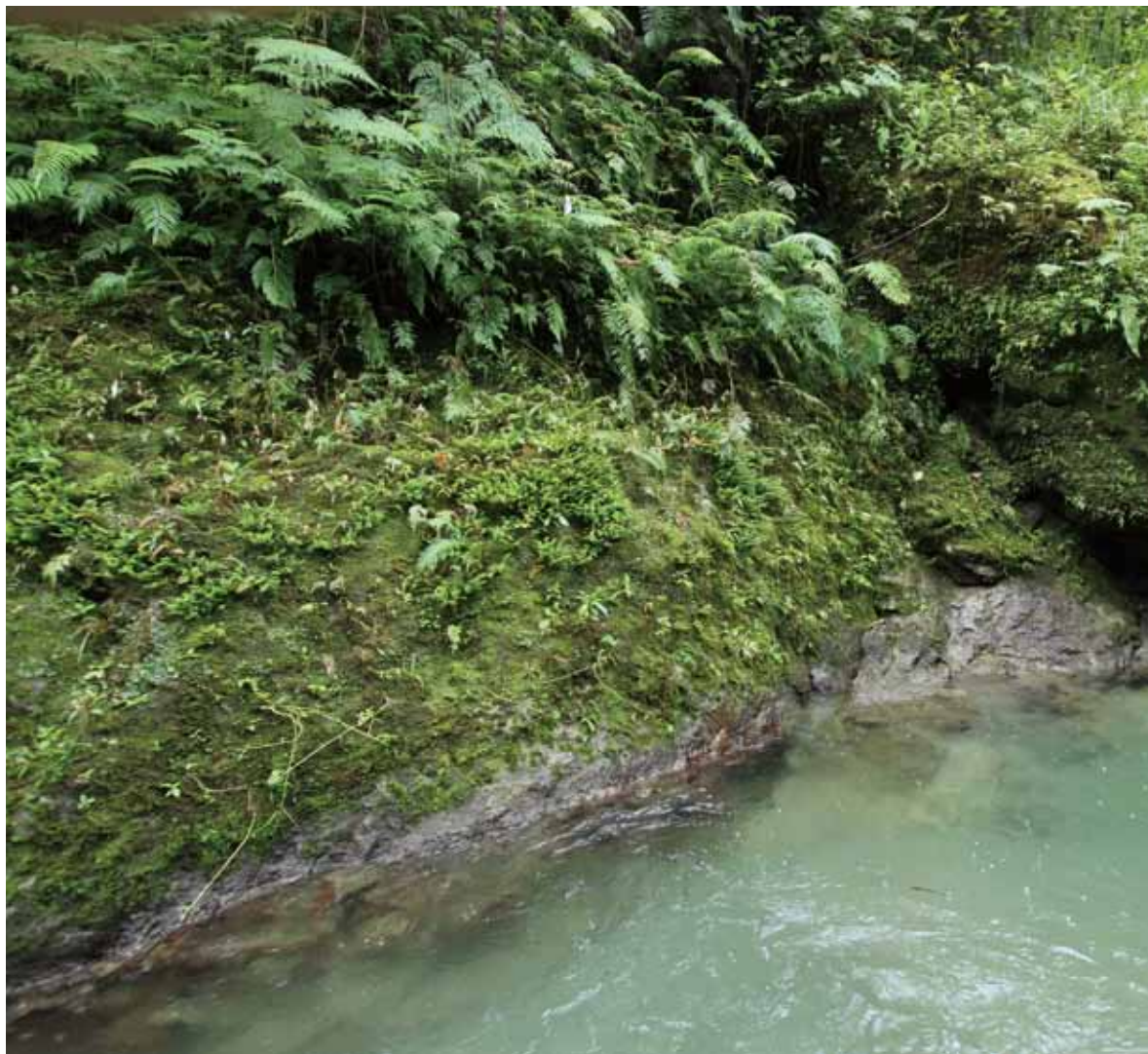
Cross section of stipe (SITW10487)



Sori (SITW10487)



Venation (SITW10487)



Habitat (SITW11180)

***Osmolindsaea minor* (Hook.) Lehtonen & Christenh.**

Etymology: *minor* = smaller; referring to the plant size.

Diagnostic characters: can be identified by its rheophytic habit, minute rhizome scales (less than 1 mm long), small pinnate fronds (lamina less than 6 cm long) with shallowly incised pinnules and marginal sori.

Distribution: Malesia and the Solomon Islands; type from the Philippines.

Ecology: a rare rheophyte found in mountain forests below 700 m, usually on rocks of stream banks.

Note: this species was usually misidentified as *Osmolindsaea odorata* (Roxb.) Lehtonen & Christenh., a species with larger rhizome scales (to 3 mm long) and laminae (usually over 10 cm long). Another similar species is *O. japonica* (Baker) Lehtonen & Christenh., which differs by having fewer pinna pairs (3–8 pinnae to a side, not 6–14) and entire pinnae (Lehtonen & al., 2013).



Plants (SITW11180)



Pinna bases (SITW11180)



Rhizome (SITW11180)



Sori (SITW11180)



Frond apex (SITW11180)



Plants (SITW00497)



Rhizome (SITW10444)



Sori (SITW10444)



Adaxial surface of lamina, backlight (SITW10444)

***Tapeinidium denhami* (Hook.) C.Chr.**

Etymology: named after the English royal navy officer Henry Mangles Denham, who was the captain of a Pacific survey.

Diagnostic characters: similar to *T. novoguineense*, but differs by having 3-pinnate fronds and thinner textured laminae.

Distribution: New Guinea, the Solomon Islands, Vanuatu, and Fiji (type locality).

Ecology: a common terrestrial species found in lowland to mountain forests at altitudes of 300–1,400 m.



Plants (SITW10425)



Rhizome (SITW10425)



Cross section of stipe (SITW10425)



Sori and venation (SITW10425)

***Tapeinidium melanesicum* K.U.Kramer**

Etymology: *melanesicum* = from Melanesia; referring to the distribution.

Diagnostic characters: this is the only *Tapeinidium* in the Solomon Islands with pinnate fronds.

Distribution: the Solomon Islands (type locality), Vanuatu, and Fiji.

Ecology: an uncommon terrestrial fern found in coastal and lowland forests below 800 m.

Note: this species is similar to widely distributed *T. pinnatum* (Cav.) C.Chr., but differs by having a conform terminal pinna, not strongly lobed as in *T. pinnatum* (Kramer, 1967).



Plant (SITWo4904)



Rhizome (SITW11623)



Sori (SITW11623)



Adaxial surface of lamina,
backlight (SITW11623)

***Tapeinidium novoguineense* K.U.Kramer**

Etymology: *novoguineense* = from New Guinea, where the type was collected.

Diagnostic characters: similar to *T. denhami*, but differs by having 2-pinnate fronds and thicker textured laminae.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a rare terrestrial species found in high mountain forests at altitudes of 1,100–1,400 m, usually on ridges and slopes.

PTERIDACEAE

Pteridaceae is one of the largest fern families, accounting for roughly 10% of extant fern diversity. The members of the family occupy diverse ecological niches, and include terrestrial, epiphytic, xeric-adapted, and aquatic species. Pteridaceae comprises five monophyletic groups (Schuettpelz & al., 2007) and each of these is recognized as a subfamily.

Fifty-three genera with ca. 1211 species worldwide; 13 genera and 48 species in the Solomon Islands, 39 of which are listed here.

Plants mostly terrestrial or rupestral, some epiphytic, and rarely aquatic; **rhizomes** erect, ascending, or creeping, usually scaly; **fronds** mostly monomorphic, simple, 1- to 4-pinnate, less often digitate or pedate, veins free or reticulate without free veinlets; **sori** mostly following the veins, immersed in grooves, on recurved membranous margin, or sometimes acrostichoid, true indusium absent, marginal sori often protected by false indusium formed by reflexed lamina margin (pseudo-indusium); **spores** trilete or monolete.

Key to genera

- 1a. Aquatic fern..... *Ceratopteris*
- b. Terrestrial or epiphytic fern..... 2
- 2a. Fronds coated abaxially with white waxy powder..... *Pityrogramma*
- b. Not as above..... 3
- 3a. Sori acrostichoid..... *Acrostichum*
- b. Sori not acrostichoid..... 4
- 4a. Fronds extremely narrow (ca. 1 mm wide) and hair-like..... *Vaginularia*
- b. Fronds much broader than 1 mm..... 5
- 5a. Sori on abaxial surface of fronds..... 6
- b. Sori marginal or submarginal..... 10
- 6a. Veins free..... 7
- b. Veins reticulate..... 8
- 7a. Fronds pinnate..... *Austrogramme*
- b. Fronds 2-pinnate..... *Coniogramme*
- 8a. Fronds fleshy, epiphytic or on rock..... *Antrophyum*
- b. Fronds herbaceous or chartaceous, terrestrial..... 9
- 9a. Sori forming two lines..... *Taenitis*
- b. Sori following the veins..... *Syngramma*
- 10a. Fronds simple..... *Haplopteris*
- b. Fronds compound..... 11
- 11a. Fronds 3-pinnate, laminae hairy..... *Cheilanthes*
- b. Fronds pinnatifid to 2-pinnate, if 3-pinnate then glabrous..... 12
- 12a. Pinnules stalked, stipes and rachises slender, glossy black..... *Adiantum*
- b. Pinnules sessile, stipes and rachises not dark and glossy..... *Pteris*

ACROSTICHUM L.

Etymology: *acros* = top; *stichos* = row; referring to the position of the sori.

Description: semi-aquatic, usually coastal or in swamps; rhizomes erect; fronds large, pinnate; sori acrostichoid.



ADIANTUM L.

Etymology: *adiantos* = unwettable; referring to a feature of the fronds.

Description: rupestral or terrestrial; rhizomes erect or short creeping, fronds 1–4 pinnate, texture thin; sori covered by reflexed frond margin.



ANTROPHYUM KAULF.

Etymology: *antron* = cave; *phyein* = grow; referring to the sori are in the lamina groove of some species.

Description: rupestral or epiphytic; rhizomes very short creeping; fronds simple; sori elongate, following the veins throughout most of the fronds.



AUSTROGRAMME E. FOURN.

Etymology: *austro* = southern; *gramma* = lined; referring to the resemblance to *Syngramma* but from the Southern Hemisphere.

Description: rheophytic; rhizomes short creeping or sub-erect; fronds simple to 2-pinnate-pinnatifid, veins free or variously reticulate; sori elongate, following the veins.



CERATOPTERIS BRONGN.

Etymology: *keras* = horn; *pterus* = ferns in general; referring to their fertile fronds.

Description: aquatic; rhizomes erect; fronds 2- to 3-pinnate, soft and fleshy; sori elongated along the costa, covered by reflexed lamina margin.



CHEILANTHES SW.

Etymology: *cheilos* = lip; *anthos* = flower; referring to their lip-like false indusia.

Description: terrestrial; rhizomes short creeping; fronds 3-pinnate; sori marginal, protected by a reflexed marginal flap.



CONIOGRAMME FÉE

Etymology: *konis* = dust; *gramme* = line; referring to the sori being elongated along the veins.

Description: terrestrial; rhizomes creeping; fronds 2-pinnate or more divided, margins not always entire, texture herbaceous; sori elongate along veins, exindusiate.



HAPLOPTERIS C.PRESL

Etymology: *haplos* = simple; *pterus* = fern; referring to the simple morphology of the fronds.

Description: epiphytic; rhizomes short creeping; fronds simple, coriaceous; sori forming two marginal or sub-marginal lines.



PITYROGRAMMA LINK

Etymology: *pityro* = bran; *gramme* = line; referring to the color and arrangement of the sori of some species.

Description: terrestrial, usually in open habitats; rhizomes erect; fronds 2- to 4-pinnatifid, with powder on abaxial side; sori borne along veins but obscured by powder.



PTERIS L.

Etymology: *pteryx* = wing or feather; referring to the shape of the frond.

Description: terrestrial; rhizomes ascending; fronds diverse, 1- to 3-pinnate, pedate, or 3-forked; sori marginal, covered by reflexed frond margin (pseudo-indusium).



SYNGRAMMA J.SM.

Etymology: *syn* = together; *gramme* = line; referring to the distribution of the sori.

Description: terrestrial; rhizomes short creeping, with hairs; fronds simple or palmate, thick and glabrous; sori following the veins, exindusiate.



TAENITIS WILLD. EX SCHKUHR

Etymology: *taenitis* = ribbon-like; referring to the general shape of the pinnae in some species.

Description: terrestrial; rhizomes creeping; fronds simple, or pinnate with a conformal terminal pinna, dimorphic with narrower fertile segments; sori linear, forming two lines or less often spreading irregularly along the veins (but not in the Solomon Islands).



VAGINULARIA FÉE

Etymology: *vagina* = sheath; referring to the morphology of its sheath-like false indusia.

Description: epiphytic or sometimes rupestral, minute plants; rhizomes short creeping; fronds simple, small and narrow; sori singular along the midvein.





Plants (SITW03349)



Apex of sterile pinna (SITW04990)



Apex of fertile pinna (SITW04990)



Venation (SITW05338)

***Acrostichum speciosum* Willd.**

Etymology: *speciosum* = good-looking; referring to the author's impression of the plants.

Diagnostic characters: a very distinct species with very large pinnate fronds, leathery laminae, and acrostichoid sori.

Distribution: Asia, Malesia, Australia, and the Pacific Islands; type from India.

Ecology: a very common species growing in mangrove swamps or on coastal cliffs.



Plant (SITWo4042)



Sori (SITWo4042)



Adaxial surface of lamina (SITWo4042)



Abaxial surface of lamina (SITWo4042)

***Adiantum aneitense* Carruth.**

Etymology: *aneitense* = from Aneitum Island in Vanuatu.

Diagnostic characters: similar to *A. diaphanum* in gross morphology, but with more pinnae (3–4 pairs) and glabrous pinnae.

Distribution: New Guinea, the Solomon Islands, and Vanuatu (type locality).

Ecology: a rare species growing on wet vertical rocks along rivers or creeks at altitudes of 700–1,200 m.



Plants (SITWo4041)



Sori (SITWo4041)



Adaxial surface of lamina
(SITWo4041)



Abaxial surface of lamina
(SITWo4041)

***Adiantum diaphanum* Blume**

Etymology: *diaphanum* = transparent or filmy; describing the thin texture of its fronds.

Diagnostic characters: the brown, unicellular needle-like setae on the pinnae are unique within the genus in the Solomon Islands.

Distribution: widely distributed from East Asia, South East Asia, Malesia, Australasia to the Pacific Islands; type from Java.

Ecology: usually found growing on wet rocks near streams below 700 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW10505)



Scales on stipe base (SITW10505)



Abaxial surface of lamina (SITW10505)



Venation, backlight (SITW10505)

***Adiantum monosorum* Baker**

Etymology: *mono* = single; *sorum* = sori; referring to that there is mostly only one sorus per pinna.

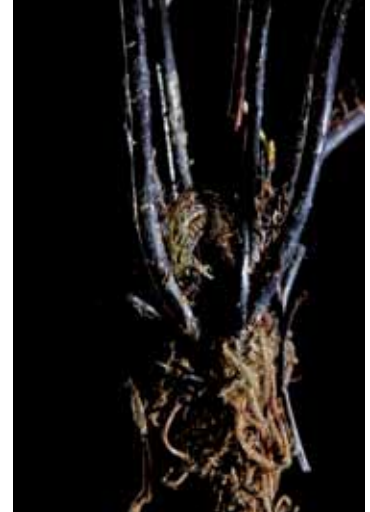
Diagnostic characters: can be distinguished from other *Adiantum* in the Solomon Islands by rather thick laminae and large indusia.

Distribution: the Philippines, Indonesia, and the Solomon Islands (type locality).

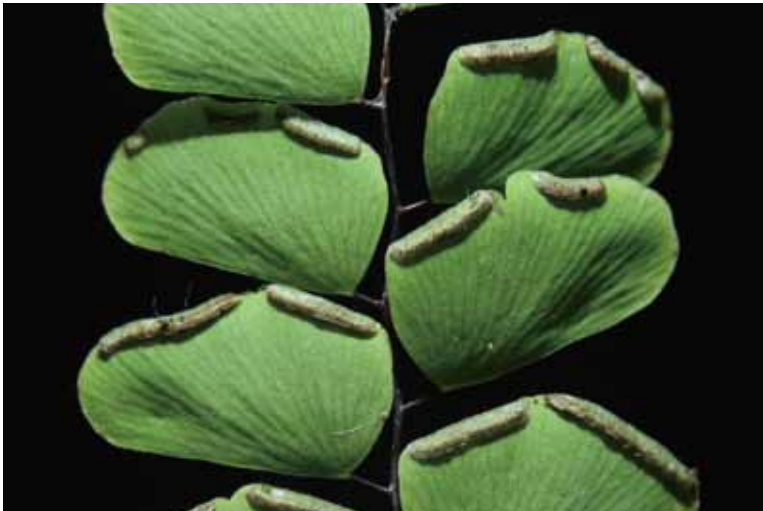
Ecology: a rare terrestrial growing in dry slopes below 900 m.



Plants (SITW11100)



Rhizome (SITW11100)



Sori (SITW11100)



Adaxial surface of lamina,
backlight (SITW11100)

***Adiantum philippense* L.**

Etymology: *philippense* = from the Philippines where the type was collected.

Diagnostic characters: the only consistently pinnate species of the genus in the Solomon Islands. Also distinguished by the fan-shaped pinnae.

Distribution: throughout the Old World tropics.

Ecology: an uncommon species usually found growing on limestone below 200 m.

Note: this is a widespread species complex comprising several cytota with different ploidy levels and reproductive modes (Kuo & al., 2016), but the plants in the Solomon Islands have not yet been studied.



Plants (SITW10540)



Stipe (SITW10540)



Sori (SITW10540)



Sorus distribution (SITW10540)

***Antrophyum callifolium* Blume**

Etymology: *kallos* = beautiful; *folium* = leaf; describing the fronds of the plants.

Diagnostic characters: this is the only species of the genus in the Solomon Islands with filiform soral paraphyses (visible with hand lens).

Distribution: widely distributed from Eastern Asia, Malesia, Australia to the Pacific Islands; type from Java.

Ecology: epiphytic or growing on rocks in damp, lowland forests below 700 m.

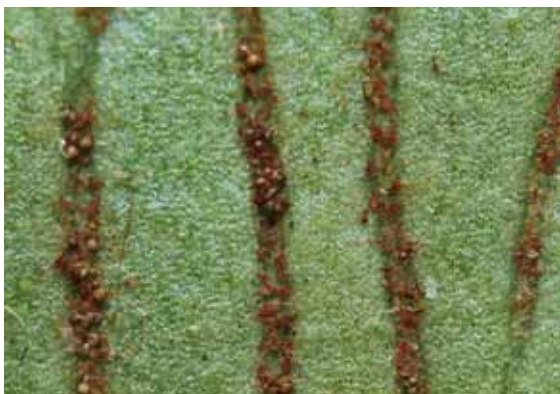
Note: the most common *Antrophyum* in the Solomon Islands.



Plant (SITW11146)



Scales on stipe (SITW11146)



Sori (SITW06907)



Cross section of stipe (SITW06907)

***Antrophyum megistophyllum* Copel.**

Eymology: *megisto* = the largest or biggest; *phyllum* = frond; referring to its very large fronds.

Diagnostic characters: separated from congeneric species by the combination of capitate soral paraphyses (visible with a hand lens) and a long stipe that is flat in cross section.

Distribution: Papua New Guinea and the Solomon Islands (type locality).

Ecology: epiphytic in humid, lowland forests, usually found near rivers or creeks.

Note: this is the largest *Antrophyum* in the Solomon Islands, with frond length sometimes exceeding 50 cm.



Plant (SITW05252)



Scales on stipe (SITW11160)



Sori (SITW11160)



Blade base (SITW11160)

***Antrophyum plantagineum* (Cav.) Kaulf.**

Etymology: *plantagineum* = plantain-like; referring to its frond shape.

Diagnostic characters: sharing the character of a long stipe that is rounded in cross section with *A. solomonense*, but *A. plantagineum* differs in its larger plant size and in having club-shaped soral paraphyses.

Distribution: widely distributed from South Asia, Malesia, Australia, to the Pacific Islands; type from Luzon in the Philippines.

Ecology: a common epiphyte in humid, lowland forests below 1,000 m.

Note: the soral lines occur towards the margins in juvenile plants, but become reticulate in mature plants.



Plants growing together with *A. callifolium* (SITW11021)



Stipe bases (SITW11021)



Scales on stipe (SITW11021)



Sori (SITW11021)

***Antrophyum smithii* C.Chr.**

Etymology: named after the American botanist Albert Charles Smith who collected the type.

Diagnostic characters: most similar to *A. subfalcatum*, sharing the character of the stipes being winged to their base, but distinguished by larger narrowly oblanceolate fronds and sometimes irregular incised apex.

Distribution: the Solomon Islands, Vanuatu, and Fiji (type locality).

Ecology: a rare epiphyte only recorded from lowland forests of Vanikoro, but common there.

Note: newly recorded for the Solomon Islands.



Plant (SITW04045)



Young frond and rhizome (SITW04045)



Sori (SITW05633)



Blade base (SITW11662)

***Antrophyum solomonense* C.W.Chen & J.H.Nitta**

Etymology: *solomonense* = from the Solomon Islands, where this fern was first described.

Diagnostic characters: similar to *A. plantagineum* in gross morphology, but can be distinguished by the combination of a long stipe that is rounded in cross section and boot-shaped soral paraphyses.

Distribution: only known from the Solomon Islands, but likely also present in Papua New Guinea.

Ecology: epiphytic on trees or tree ferns; usually found in primary forests in lowland areas near creeks.

Note: this species was usually misidentified as *A. semicostatum* Blume in the past (Chen & al. 2015).



Plant (SITW04047)

***Antrophyum subfalcatum* Brack.**

Etymology: *sub* = like; *falcatum* = sickle-shaped; referring to the morphology of its fronds.

Diagnostic characters: the smallest species of the genus in the Solomon Islands, with the fronds usually less than 20 cm in length and 2 cm in width. The soral paraphyses are globose (visible with hand lens).

Distribution: Australia, Fiji (type locality), New Guinea, and the Solomon Islands.

Ecology: an uncommon epiphyte near rivers or creeks in lowland forests below 700 m.



Stipe bases (SITW11148)



Rhizome scales (SITW11148)



Sori (SITW11148)



Adaxial surface of lamina (SITW11148)



Habitat (SITW10576)



Rhizome and stipe bases
(SITW10576)



Adaxial surface of lamina
(SITW10576)



Sori (SITW10576)

***Austrogramme decipiens* (Mett.) Hennisman**

Etymology: *decipiens* = misleading, deceiving; presumably referring to the difficulties experienced by the author when classifying this taxon.

Diagnostic characters: the only species of the genus in the Solomon Islands, distinguished by the pinnate fronds and short linear sori on the abaxial side of the fronds.

Distribution: the Solomon Islands, New Caledonia (type locality), and Vanuatu.

Ecology: a rare rheophyte only known from Vanikoro at altitudes of 500–700 m.

Note: newly recorded for the Solomon Islands.



Plants (SITW 13180, photographed by T.-C. Hsu)



Sterile frond (SITW 13180, photographed by T.-C. Hsu)



Fertile pinnae (SITW 13180, photographed by T.-C. Hsu)

***Ceratopteris thalictroides* (L.) Brongn.**

Etymology: *thalictroides* = like *Thalictrum*, a genus of flowering plants; referring to the morphology of its fronds.

Diagnostic characters: the aquatic habit and very soft and fleshy fronds distinguish it from other members of the family in the Solomon Islands.

Distribution: cosmopolitan; type from Sri Lanka.

Ecology: an uncommon aquatic species in open freshwater swamps of lowland areas.



Habitat (SITW05694)



Plants (SITW05694)



Abaxial surface of lamina (SITW05694)



Sori (SITW05694)

***Cheilanthes tenuifolia* (Burm.f.) Sw.**

Etymology: *tenuis* = thin; *folia* = leaf; referring to its finely divided fronds.

Diagnostic characters: the hairy and finely divided fronds distinguish it from other members of the family in the Solomon Islands.

Distribution: widely distributed from Asia, Malesia, Australasia, to the Pacific Islands; type from India.

Ecology: an uncommon terrestrial species at open grasslands of lowland areas below 700 m.



Plant (SITW03005)



Stipe base (SITW03005)



Pinna bases (SITW03005)



Sori (SITW03005)

***Coniogramme fraxinea* (D.Don) Diels**

Etymology: *fraxinea* = like *Fraxinus*, referring to the fronds of this species being similar to the leaves of the flowering plant *Fraxinus* which are also pinnate.

Diagnostic characters: can be distinguished by having pinnate fronds (2-pinnate on the basal pinnae) and sori elongated along the veins.

Distribution: widely distributed from Nepal (type locality), India, China, south East Asia, Malesia, to the Pacific Islands.

Ecology: a rare species found in mountain forests, hillslopes and valleys, perching on steep banks, 700–1,200 m.



Habitat (SITW11014)



Rhizome (SITW10552)



Sori (SITW07627)



Venation (SITW10552)

***Haplopteris elongata* (Sw.) E.H.Crane**

Etymology: *elongata* = elongated; referring to its elongated fronds.

Diagnostic characters: sharing the character of marginal soral lines with *H. ensiformis*, but the length of the apical cell of the soral paraphyses in *H. elongata* is only a little longer than wide (visible under a microscope). In addition, *H. elongata* has a longer creeping rhizome and green young fronds.

Distribution: widespread in the Old World tropics and subtropics; type from India.

Ecology: usually found at altitudes below 800 m, in evergreen, riverine forests.



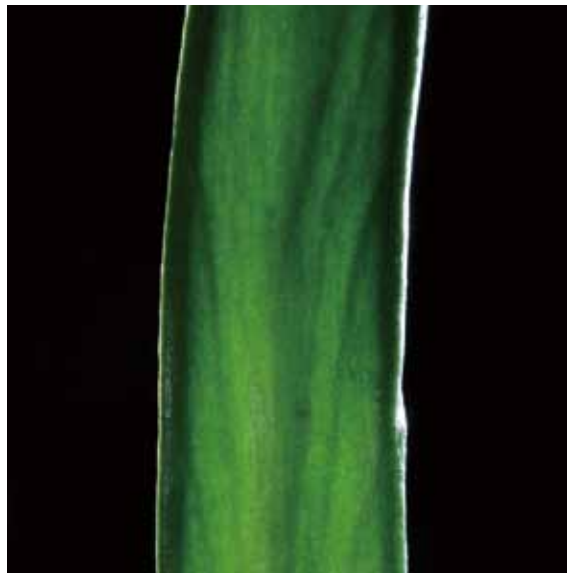
Plants (SITW03352)



Rhizome and young frond (SITW10432)



Sori (SITW10432)



Adaxial surface of lamina, backlight (SITW10432)

***Haplopteris ensiformis* (Sw.) E.H.Crane**

Etymology: *ensis* = sword; *formis* = shape; referring to the shape of its fronds.

Diagnostic characters: the fronds are similar to those of *H. elongata* but the length of the apical cell of the soral paraphyses is much longer than wide (visible under a microscope). In addition, *H. ensiformis* has a shorter creeping rhizome and red young fronds.

Distribution: widespread in the Old World tropics and subtropics; type from Mauritius.

Ecology: commonly found in lowland forests and plantations, and occasionally in mountain forests above 1,000 m.

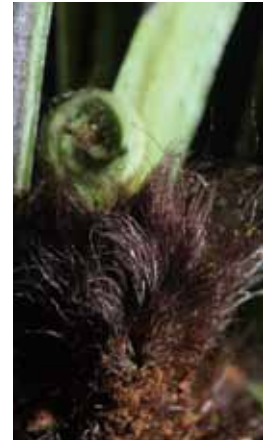
Note: although frond size is used as a distinguishing character by many authorities, the shape of the apical cell of the soral paraphyses is a better character to separate *H. ensiformis* from *H. elongata*, but requires a microscope (Chen & al. 2017a).



Plant (SITW03981)



Stipe bases (SITW11626)



Rhizome scales (SITW11626)



Sori (SITW11626)

***Haplopteris scolopendrina* (Bory) C.Presl**

Etymology: *scolopender* = centipede; referring to its long fronds.

Diagnostic characters: *H. scolopendrina* can be distinguished from the other two species of *Haplopteris* in the Solomon Islands by its intramarginal soral lines which are protected by reflexed frond margins.

Distribution: restricted to the tropics of the Old World; type from Reunion.

Ecology: a common high epiphyte in lowland forests below 1,000 m.



Plants (SITW10418)



Rhizome and stipe bases (SITW10418)



Sori (SITW10418)



Venation (SITW10418)

***Pityrogramma calomelanos* (L.) Link**

Etymology: *kalos* = beautiful, *melaina* = black; referring to the shiny black stipes.

Diagnostic characters: easily recognized by the white powder on the abaxial side of its fronds.

Distribution: neotropical but naturalised throughout the paleotropics

Ecology: an uncommon species in the lowlands, in open places such as stony soil of riverbeds and road margins.



Plant (SITW02973)



Sori (SITW01074)



Venation (SITW01074)

***Pteris comans* G.Forst.**

Etymology: *comans* = hairy; presumably referring to its abundant soral paraphyses.

Diagnostic characters: a large species with the lamina 3-pinnate and ovate-deltoid in outline, and with deeply lobed pinnae and oblong ultimate segments which are often falcate.

Distribution: Papua New Guinea, the Solomon Islands, Vanuatu (type locality), Fiji, and Australia.

Ecology: an uncommon species found in mid-altitude forests, growing on rather wet soil or rupestral near streams.



Plants (SITW05706)



Basal pinnae (SITW05706)



Sori (SITW05706)



Pinna apex, backlight (SITW05706)

***Pteris ensiformis* Burm.f.**

Etymology: *ensis* = sword; *formis* = shape; referring to the shape of the ultimate segments.

Diagnostic characters: can be recognized by its broadly lanceolate or oblong pinnae with toothed apices, and by its dimorphic fronds.

Distribution: widely distributed in the Old World and the Pacific Islands; type from Sri Lanka.

Ecology: a common fern found in disturbed lowland forests below 300 m.



Plants (SITW10419)



Rhizome (SITW03471)



Sori (SITW10419)



Lamina base (SITW10419)

***Pteris ligulata* Gaudich.**

Etymology: *ligulata* = strap-shaped; referring to the morphology of the pinnules.

Diagnostic characters: similar to *P. pacifica* but is generally smaller and usually has dividing pinnae throughout the fronds whereas *P. pacifica* only branches on the proximal pinnae.

Distribution: Malesia and the Solomon Islands; type from Moluccas.

Ecology: usually found in shaded places near stream banks below 300 m, uncommon.



Plant (SITW06885)



Scales on stipe (SITW05233)



Spines on costule (SITW05233)



Adaxial surface of lamina, backlight (SITW11113)

***Pteris pacifica* Hieron.**

Etymology: *pacifica* = from the Pacific Islands, where this species was first described.

Diagnostic characters: most likely to be confused with *P. ligulata*, but *P. pacifica* differs in having only the basal pinnae dividing and in having erect, white spines on the veins of the adaxial surface of the fronds.

Distribution: the Philippines, Indonesia, Papua New Guinea, the Solomon Islands, Fiji, Samoa (type locality), Polynesia, and Australia.

Ecology: a common species growing in both open ground and forests, below 900 m.



Plants (SITW05699)



Sorus (SITW05699)



Rhizome (SITW11125)



Abaxial surface of sterile pinna (SITW11125)

***Pteris papuana* Ces.**

Etymology: *papuana* = from Papua New Guinea, where the type was collected.

Diagnostic characters: the other pinnate species in the Solomon Islands are *P. vittata* and *P. vitiensis*, but *P. papuana* differs from those two species in having much larger fronds and sharply serrated pinna margins (in the sterile fronds).

Distribution: Indonesia, Papua New Guinea (type locality), the Solomon Islands, and Vanuatu.

Ecology: a common species growing in open places, usually on road cuttings below 250 m.



Plant (SITW05381)



Scales on stipe base (SITW11126)



Sorus (SITW05381)



Venation (SITW11126)

***Pteris torricelliana* Christ**

Etymology: from Torricelli Mountains in Papua New Guinea, where the type was collected.

Diagnostic characters: a very large species with 2-pinnate fronds (except for large basiscopic pinnules on basal pinnae) up to 2 m long, pinnules at right angles to the midrib, and free veins.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a rare species found in damp forests at altitudes of 400–700 m, usually near streams.

Note: this species is very similar to *P. terminalis* Wall. ex J.Agardh., a widespread species. Further study is needed.



Plants (SITW05618)



Scales on stipe base (SITW04065)



Sori (SITW05618)



Adaxial surface of lamina (SITW04065)

***Pteris tripartita* Sw.**

Etymology: *tripartita* = having three parts; referring to its 3-partite fronds.

Diagnostic characters: *P. tripartita* shares the characters of tripartite pinnae and reticulate venation with *P. wallichiana* J.Agardh var. *samoensis* C.Chr. (not pictured), but the former has areolae along both the costae and costules while the latter has areolae only along the costules.

Distribution: widely distributed in the Paleotropics; type from Java.

Ecology: a common species found in open grounds, gardens, and forest clearings, below 300 m.



Plants (SITW05282)



Scales on stipe base (SITW05282)



Sori (SITW05282)



Venation (SITW05282)

***Pteris vitiensis* Baker**

Etymology: *vitiensis* = from Viti Levu, the largest island in Fiji.

Diagnostic characters: fronds pinnate (except for large basiscopic pinnules on basal pinnae) with entire margins, strongly dimorphic, texture quite thick and firm, and veins free.

Distribution: the Solomon Islands and Fiji (type locality).

Ecology: an uncommon species usually found on ridges and steep hillsides at altitudes of 200–900 m.

Note: newly recorded for the Solomon Islands.



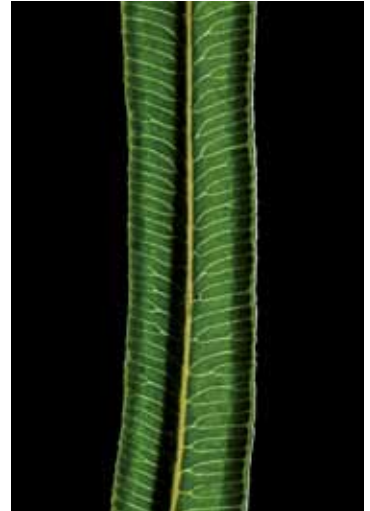
Habitat (SITW11029)



Scales on stipe base (SITW11029)



Sori (SITW11029)



Venation (SITW11029)

***Pteris vittata* L.**

Etymology: *vittata* = striped; referring to its narrow and closely-set pinnae.

Diagnostic characters: fronds are pinnate as in *P. papuana* and *P. vitiensis*, but *P. vittata* has much smaller fronds less than 1 m long and softer lamina texture.

Distribution: throughout the Paleotropics; type from China.

Ecology: a common species growing in open places below 700 m.



Habitat (SITW05753)



Adaxial surface of lamina
(SITW05753)



Sorus (SITW07718)



Venation (SITW05753)

***Pteris warburgii* Christ**

Etymology: named after the German botanist Otto Warburg, who collected the type.

Diagnostic characters: a very distinct species with pinnatifid fronds, only about 3 pairs of pinnae and a conformal terminal segment.

Distribution: Indonesia, Papua New Guinea, and the Solomon Islands; type from Moluccas.

Ecology: a rare species of lowland forests below 500 m, growing in very shaded places near streams.



Plant (SITW01025)

***Pteris weneri* (Rosenst.) Holttum**

Etymology: named after the German botanist Eugen Werner, who collected the type.

Diagnostic characters: a large, mid-altitude species, tripartite in form with discontinuous sori on segments that are thin in texture. The discontinuous sori separate it from both *P. wallichiana* var. *samoensis* (not pictured) and *P. tripartita*.

Distribution: Malesia, the Solomon Islands, and Fiji; type from New Guinea.

Ecology: a common species found in damp gullies at altitudes of 660–1,300 m.



Scales on young buds (SITW11092)



Cross section of stipe (SITW11092)



Part of basal lamina (SITW11092)



Sori (SITW11092)



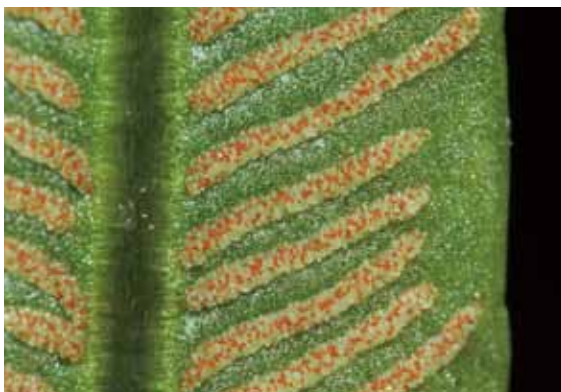
Venation (SITW11092)



Plants (SITW10579)



Rhizome (SITW10579)



Sori (SITW06947)



Adaxial surface of lamina, backlight (SITW10579)

***Syngamma borneensis* (Hook.) J.Sm.**

Etymology: *borneensis* = from Borneo Island, where the type was collected.

Diagnostic characters: the only species of the genus in the Solomon Islands with the stipe winged to its base.

Distribution: Malesia, the Solomon Islands, and Vanuatu; type from Borneo.

Ecology: a rare species found near ridges at altitudes of 500–1,000 m.



Plants (SITW00759)



Rhizome (SITW11634)



Sori (SITW06948)



Venation (SITW11634)

***Syngramma hookeri* C.Chr.**

Etymology: named after the English botanist William Jackson Hooker, who was the first to recognize it as a distinct species.

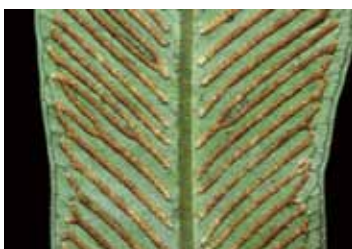
Diagnostic characters: can be confused with *S. borneensis* and *S. spathulata*, but differs from the former by having a long, distinct, unwinged stipe and from the latter by having narrow lanceolate laminae.

Distribution: Malesia, the Solomon Islands, and Fiji (type locality).

Ecology: an uncommon species growing in mountain forests on ridges, at altitudes of 500–1,000 m.



Plants (SITW03106)



Abaxial surface of lamina (SITW07705)



Venation (SITW10427)



Sori (SITW07705)

***Syngamma quinata* (Hook.) Carruth.**

Eymology: *quinata* = having five parts; referring to the morphology of the fronds.

Diagnostic characters: can be easily distinguished by its palmate fronds.

Distribution: Sarawak, Ambon Island, Papua New Guinea, the Solomon Islands (type locality), and Vanuatu.

Ecology: the most common species of the genus in the Solomon Islands, found in mountain forests below 1,200 m.

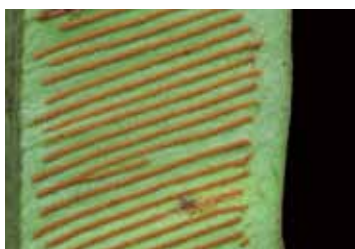
Note: very big plants have been identified as *S. grandis* (Copel.) C.Chr. or *S. magnifica* (Copel.) Holttum, but we recognize only one species here.



Plants (SITW05770)



Rhizome (SITW10429)



Sori (SITW10429)



Venation (SITW10429)

***Syngamma spathulata* (C.Chr.) Holttum**

Etymology: *spathulata* = shaped like a spatula; referring to the frond shape.

Diagnostic characters: most similar to *S. hookeri* but can be distinguished by its elliptic laminae.

Distribution: the Solomon Islands and Fiji (type locality).

Ecology: a rare terrestrial usually found in shaded slopes near streams below 500 m.

Note: newly recorded for the Solomon Islands.



Habitat (SITW11085)

***Syngramma* sp.**

Diagnostic characters: readily distinguished from the other *Syngramma* in the Solomon Islands by its pinnate fronds.

Ecology: a very rare species found only on Vanikoro growing along a stream at ca. 600 m.

Note: from the irregularity of the frond lobes, this may be a mutant or hybrid.



Plant (SITW11085)



Sori (SITW11085)



Rhizome (SITW11085)



Adaxial surface of frond (SITW11085)



Venation (SITW11085)



Plants (SITW11635)



Adaxial surface of lamina (SITW11635)



Rhizome (SITW11635)



Sorus (SITW11635)

***Taenitis blechnoides* (Willd.) Sw.**

Etymology: *blechnoides* = similar to *Blechnum*; referring to its pinnate fronds being similar to some species of *Blechnum*.

Diagnostic characters: can be recognized by having elongated sori, midway between the midrib and margin, continuous from petiole to apex.

Distribution: very widely distributed from Asia, Malesia, to the Pacific Islands; type from India.

Ecology: an uncommon fern growing on dry slopes below 900 m.



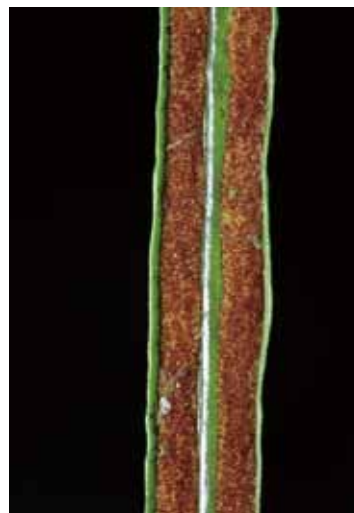
Habitat (SITW03852)



Plants (SITW11032)



Adaxial surface of sterile lamina (SITW03370)



Sori (SITW04993)

***Taenitis diversifolia* Holtum**

Etymology: *diverse* = different; *folia* = leaf; referring to the dimorphism of the fertile and sterile fronds.

Diagnostic characters: its strongly dimorphic fronds distinguish it from *T. blechnoides*.

Distribution: the Solomon Islands (type locality) and Vanuatu.

Ecology: an uncommon fern mostly found in lowland forests and semi-open areas below 900 m.



Plants (SITW10441)



Sori (SITW10441)



Rhizome (SITW10441)



Adaxial surface of lamina (SITW10441)

***Taenitis* sp.**

Diagnostic characters: morphologically intermediate between *T. blechnoides* and *T. diversifolia*, sharing the character of broad fertile fronds with the former and leaf dimorphism with the latter (fertile fronds are much longer than sterile ones).

Ecology: a rare (but common in Vanikoro) terrestrial fern growing on dry, lowland slopes.



Plants (SITW03031)



Scales on rhizome (SITW11065)



Sorus (SITW11065)



Adaxial surface of lamina (SITW11065)

***Vaginularia acrocarpa* Holttum**

Etymology: *acro* = summit; *carpa* = fruit, sori for ferns; referring to the sori usually extending to the frond tip.

Diagnostic characters: a rather extraordinary looking fern, being like a very small, fine leaved epiphytic grass.

Distribution: Australia, Papua New Guinea (type locality), and the Solomon Islands.

Ecology: an uncommon epiphyte in damp lowland forests at altitudes of 50–800 m.

DENNSTAEDTIACEAE

Dennstaedtiaceae lacks clear distinguishing characters and has a complex taxonomic history. Over 90 genera have been placed in the family but most authors accept no more than 18 genera. A close affinity with Lindsaeaceae was usually proposed until recent molecular evidence showed that two different families should be recognized on the principle of monophyly. Nowadays, the sister relationship between Dennstaedtiaceae and the eupolypod ferns has been also resolved (Lu & al., 2015; Rothfels & al., 2015); however, the generic classification of the family still needs further study.

Ten genera with ca. 265 species worldwide; 5 genera and 10 species in the Solomon Islands, 7 of which are listed here.

Plants mostly terrestrial, sometimes scandent; **rhizomes** long creeping, bearing hairs; **fronds** often large, 1- to 4-pinnate or more divided; **veins** free or reticulate, if so then without included veinlets; **sori** marginal or submarginal, orbicular, with cup-shaped indusium or linear, covered by reflexed lamina margin (false indusium); **spores** trilete or monolete.

Key to genera

- 1a. Sori elongated along frond margin..... 2
 - b. Sori orbicular..... 3
- 2a. Veins free..... *Pteridium*
 - b. Veins reticulate..... *Histiopteris*
- 3a. Sori discrete with cup-shaped indusia..... 4
 - b. Sori protected by reflexed lamina margin..... *Hypolepis*
- 4a. Sori marginal..... *Dennstaedtia*
 - b. Sori intramarginal..... *Microlepia*

DENNSTAEDTIA BERNH.

Eymology: named after the German botanist A. W. Dennstaedt.

Description: terrestrial or climbing; rhizomes short or long creeping, with hairs; fronds medium to very large, 2- to 4-pinnate, deltoid in outline; sori marginal, on vein ends, each with a cup-shaped indusium.



HISTIOPTERIS (J.AGARDH) J.SM.

Eymology: *histon* = web; *pterus* = fern; referring to its reticulate venation.

Description: terrestrial; rhizomes long creeping; fronds glabrous, butterfly-like stipules present at the base of the pinnae; sori linear, protected by false indusia.



HYPOLEPIS BERNH.

Etymology: *hypo* = under; *lepis* = scale; referring to the sori being covered by a scale-like marginal flap in some species.

Description: terrestrial; rhizomes long creeping; fronds large, 2- to 4-pinnate, deltoid in outline, veins free; sori orbicular, on vein ends at segment margins, protected by reflexed marginal flaps.



MICROLEPIA C.PRESL

Etymology: *micros* = small; *lepis* = scale; referring to its scale-like indusia.

Description: terrestrial; rhizomes short creeping, with hairs; fronds medium sized, 1- to 4-pinnate, oblong to ovate-oblong, veins free; sori on vein ends, intramarginal, indusia cup-shaped, membranous.



PTERIDIUM GLED. EX SCOP.

Etymology: *ptēris* = fern; *pteridium* = small fern.

Description: terrestrial; rhizomes long creeping, with hairs; fronds 3- to 4-pinnate, laminae thick, the abaxial surface glabrous to very hairy, veins free; sori elongate along the pinna margins, covered by outer false indusia and inner true thin indusia.





Plants (SITW11084)

***Dennstaedtia glabrata* (Ces.) C.Chr.**

Etymology: *glabra* = without hairs; referring to its glabrous fronds.

Diagnostic characters: the dark and spiny stipe is distinctive.

Distribution: the Philippines, Indonesia, Papua New Guinea, the Solomon Islands, and Fiji; type from West New Guinea.

Ecology: a rare species usually found in lowland forests along streams, at altitudes of 100–750 m.

Note: *Dennstaedtia tripinnatifida* Copel. is treated here as a synonym of *D. glabrata*.



Cross section of stipe (SITW11084)



Spiny stipe (SITW11084)



Stipe base (SITW11084)



Young frond (SITW11084)



Sori (SITW11084)



Plant (SITW11583)

***Dennstaedtia samoensis* (Brack.) T.Moore**

Etymology: *samoensis* = from Samoa, where the type was collected.

Diagnostic characters: a very large fern, about the size of *Angiopteris microua* or *Pleocnemia leuzeana*, but with very finely divided laminae and creeping rather than erect rhizomes.

Distribution: Papua New Guinea and the Pacific Islands; type from Samoa.

Ecology: found in open places like ridges and stream sides at low altitudes below 800 m.



Habitat (SITW11583)



Adaxial surface of lamina (SITW11583)



Pinna base (SITW11583)



Sori (SITW06870)



Venation (SITW11583)



Plants (SITW10567)



Rhizome (SITW10567)



Stipules (SITW10567)



Venation (SITW10567)

***Histiopteris herbacea* Copel.**

Etymology: *herbacea* = herbaceous; referring to the texture of its fronds.

Diagnostic characters: similar to *H. incisa*, but *H. herbacea* has shallowly lobed rather than deeply lobed segments, and the size of the stipules is smaller.

Distribution: endemic to the Solomon Islands.

Ecology: a wide-spreading fern, commonly found in high light places in lowland forests.



Plants (SITW11143)



Stipules (SITW11143)



Sori (SITW11143)



Venation (SITW11143)

***Histiopteris incisa* (Thunb.) J.Sm.**

Etymology: *incisa* = deeply cut; referring to its deeply incised pinnules.

Diagnostic characters: pinnules more deeply lobed than *H. herbacea*, and *H. incisa* also has larger stipules.

Distribution: throughout the tropics; type from South Africa.

Ecology: an uncommon species found in open forests on mountain ridges, at altitudes of 750–1,900 m.



Plants (SITW11128)

***Hypolepis elegans* Carruth.**

Etymology: *elegans* = elegant; referring to the appearance of the fronds.

Diagnostic characters: distinguished by having acicular hairs on its soft-textured fronds and with sori protected by a membranous flap from the lamina margins.

Distribution: New Guinea and the Pacific Islands; type from Vanuatu.

Ecology: a common terrestrial species found in open habitats from low to mid-altitudes (0–1,300 m).

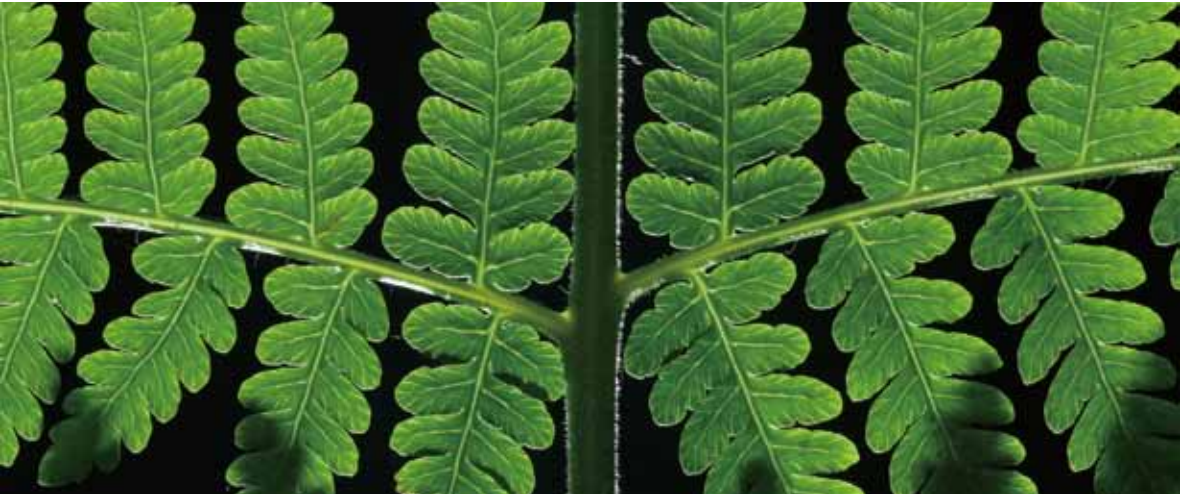
Note: from its distribution, *H. tenuifolia* (G.Forst.) Bernh. could be expected to be also present in the Solomon Islands. It differs in having glandular rather than acicular hairs on the abaxial side of the veins and axes.



Rhizome (SITW11128)



Adaxial surface of lamina (SITW11128)



Venation (SITW11128)



Sori (SITW11128)



Young frond (SITW11128)



Habitat (SITW10486)



Rhizome (SITW10486)



Sori (SITW10486)



Adaxial surface of lamina (SITW10486)

***Microlepia speluncae* (L.) T.Moore**

Etymology: *spelunca* = a cave; referring to the habitat where the plant was initially recorded.

Diagnostic characters: most likely to be confused with *Hypolepis* or *Dennstaedtia*, but is distinguished by having cup-shaped indusia away from the pinna margins.

Distribution: throughout the tropics; type from Sri Lanka.

Ecology: a common terrestrial fern growing in plantations and margins of secondary forests at low altitude.



Plants (SITW10503)



Rhizome (SITW10503)



Sori (SITW10503)



Adaxial surface of pinnae
(SITW10503)

***Pteridium aquilinum* (L.) Kuhn subsp. *wightianum* (J.Agardh) W.C.Shieh**

Etymology: *aquilinum* = eagle-like; referring to the shape of the vascular bundle in the stipe and named after the Scottish botanist Robert Wight, respectively.

Diagnostic characters: easily distinguished by the very thick texture of its fronds and having sori elongated along the lamina margins.

Distribution: widely distributed in Asia, Malesia, Australia, and the Solomon Islands; type from India.

Ecology: a rare terrestrial species, only recorded from Isabel and Guadalcanal.

Note: the intermediate morphology suggests the plants in the Solomon Islands may be of hybrid origin between *P. aquilinum* subsp. *wightianum* and *P. esculentum* (G.Forst.) Cockayne (Thomson, pers. comm., 2016). Further study is needed.

DIPLAZIOPSISIDACEAE

Diplaziopsidaceae is a small fern family with only two genera, *Diplaziopsis* and *Homalosorus*, distributed in Asia (extending east to the Pacific Islands) and America, respectively. Traditionally, the members of this family were thought to be closely related to *Diplazium*; however, molecular phylogenetic analyses resolve *Diplaziopsis* + *Homalosorus* as a monophyletic group that is sister to Hemidictyaceae + Aspleniaceae (Rothfels & al., 2012).

Two genera with ca. 4 species worldwide; only 1 species in the Solomon Islands.

Plants terrestrial or rupestral; **roots** fleshy, pale, non-proliferous; **rhizomes** erect to suberect or short creeping, with lanceolate, non-clathrate scales; **fronds** monomorphic, non-bulbiferous, soft-herbaceous, 1-pinnate, veins free or reticulate toward the pinna margins without free included veinlets; **sori** singular, elongated along the vein, rarely paired back to back along the same vein, indusiate; **spores** monolete.

DIPLAZIOPSIS C.CHR.

Etymology: *diplazios* = double; *opsis* = like; referring to the similarity with members of *Diplazium*.

Description: terrestrial; rhizomes erect to suberect; fronds pinnate, the apex conform, texture fleshy, glabrous; sori elongate along veins, rarely paired back to back along the same vein, indusiate.





Plant (SITW07568)



Rhizome (SITW07568)



Sori (SITW07568)



Venation (SITW07568)

***Diplaziopsis javanica* (Blume) C.Chr.**

Etymology: *javanica* = from Java in Indonesia, where the type was collected.

Diagnostic characters: the fleshy pinnate fronds with conspicuously reticulate venation is easily recognizable.

Distribution: Paleotropics, from Asia to the Pacific Islands; type from Java.

Ecology: an uncommon fern species found in mid- to high-altitude montane forests (600–1,300 m), usually near small creeks.

ASPLENIACEAE

Aspleniaceae is one of the largest fern families. The Aspleniaceae is widespread, occurring in both temperate and tropical regions of all continents, except Antarctica. Although over ten genera have been recognized, recent molecular studies have shown that all the small satellite genera are nested within *Asplenium*, except for *Hymenasplenium* which is sister to all other asplenioid ferns (Schneider & al., 2004a; Ohlsen & al., 2014). As a result, only the two monophyletic genera *Asplenium* and *Hymenasplenium* are usually accepted nowadays.

Two genera with ca. 730 species worldwide; 2 genera and over 33 species in the Solomon Islands, 22 of which are listed here.

Plants terrestrial, rupestral, or epiphytic; **rhizomes** creeping, ascending, or suberect; **fronds** monomorphic, simple or variously pinnately divided, veins free or rarely reticulate near margin (bird nest ferns); **sori** elongate along the veins with linear indusia; **spores** reniform, monolete.

Key to genera

- 1a. Rhizomes radial, erect or shortly creeping, or if long creeping then firm; lamina thin to thick..... *Asplenium*
- b. Rhizomes dorsiventral, long creeping, slender and fleshy; lamina thin.....
..... *Hymenasplenium*

ASPLENIUM L.

Etymology: *a* = without; *splen* = spleen; referring to a historical belief of medical usage of the plants.

Description: rupestral, epiphytic, or terrestrial; rhizomes erect or shortly creeping, rarely long creeping; frond simple to 4-pinnate; sori elongated, indusiate.



Hymenasplenium Hayata

Etymology: *hymen* = membrane; referring to their membranous fronds relative to typical *Asplenium*.

Description: rupestral or terrestrial; rhizomes dorsiventral, slender; frond pinnate; sori elongated, indusiate.





Plant (SITW07578)



Rhizome scales (SITW03948)



Sori (SITW07578)



Bud on frond apex (SITW04919)

***Asplenium acrobryum* Christ**

Etymology: *acro* = highest; *bryum* = moss; referring to the bulbils forming at the frond apex which is mossy-looking.

Diagnostic characters: similar to *A. amboinense* in having simple fronds with a proliferous apex. *Asplenium acrobryum* differs by having a long creeping rhizomes with well-spaced stipes (ca. 3 cm apart) and rhizome scales that have a broad base.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon fern of montane forests at altitudes of about 1,500 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW11591)



Rhizome (SITW11591)



Sori (SITW11591)



Venation (SITW11591)

***Asplenium affine* Sw.**

Etymology: *affine* = related, similar; relationship to the species is unclear.

Diagnostic characters: frond 2- to 3-pinnate with more than 10 pairs of primary pinnae. Close in appearance to *A. laserpitifolium* Lam. (not illustrated) but with smaller fronds and rhizome scales.

Distribution: paleotropics, from Madagascar, Mascarene Islands, Sri Lanka, India, China, South East Asia, Malesia, to the Pacific Islands; type from Mauritius.

Ecology: epiphytic on mossy tree trunks in damp forests at low to medium altitudes.

Note: the name *A. cuneatum* Lam. is sometimes used in the Pacific Islands. However, Salgado (2005) stated *A. cuneatum* is an American fern (with a type believed to be from Jamaica) with black clathrate rhizome scales which are different from those of the Solomon Islands plants (reddish brown and not clathrate).



Plant (SITW10430)



Rhizome scales (SITW10430)



Sori and venation (SITW10430)



Cross section of stipe (SITW10430)

***Asplenium amboinense* Willd.**

Etymology: from Ambon Island, Moluccas, where the type was collected.

Diagnostic characters: the proliferous, simple fronds and short creeping rhizomes distinguish this from other *Asplenium* species.

Distribution: Indonesia, through Papua New Guinea, the Solomon Islands, and Fiji; type from Moluccas.

Ecology: one of the commonest *Asplenium* species in lowland forests, often seen as a climber at the base of trees or shrubs, but is infrequently seen fertile.



Plants (SITW03006)



A bud at the apex of elongated rachis (SITW03006)



Scales on stipe (SITW03050)



Sori (SITW03006)

***Asplenium atrovirens* (Hook.) Baker**

Etymology: *atra* = black or dark; *virens* = green; referring to the dark green color of the fronds.

Diagnostic characters: frond pinnate with about 20 pairs of pinnae, pinnae narrowly oblong and serrated only at the apex, proliferous, bulbils forming at the frond apex.

Distribution: Papua New Guinea and the Solomon Islands (type locality).

Ecology: montane forests at altitudes of 50–750 m, usually rupestral on boulders by streams or epiphytic on tree trunks.



Plant (SITW10585)



Rhizome scales (SITW10585)



Cross section of midrib (SITW10538)



Abaxial side of midrib (SITW10585)

***Asplenium australasicum* (J.Sm.) Hook.**

Etymology: *australasicum* = Australian; referring to its type locality.

Diagnostic characters: *Asplenium australasicum* resembles *A. musifolium* and *A. oblanceolatum*. It differs from *A. musifolium* by having abaxially keeled midribs. It differs from *A. oblanceolatum* by having abaxially keeled midribs and sori that extend less than half way from the rachis to the lamina's margin.

Distribution: Australia (type locality), New Guinea, and the Pacific Islands.

Ecology: a very common epiphytic fern occurring from the coast to montane forests below 1,000 m.

Note: this species was usually been misidentified as *A. nidus* L., a species with abaxially flat or slightly rounded midribs.



Plants (SITW10446)



Rhizome and stipe bases (SITW10446)



Abaxial surface of pinnae (SITW10446)



Stoloniferous frond with sori (SITW10446)

***Asplenium bipinnatifidum* Baker**

Etymology: *bipinnatifidum* = twice-divided but not to the costa referring to the division of its fronds.

Diagnostic characters: the very small and stoloniferous fronds differ from all other *Asplenium* species.

Distribution: Moluccas, Papua New Guinea, the Solomon Islands, Vanuatu, and Fiji (type locality).

Ecology: occasionally in lowland forests, and common at higher altitude in gullies and hillslopes, 300–1,500 m.



Plant (SITW11091)



Sori (SITW11091)



Rhizome (SITW11091)



Frond base (SITW11091)

***Asplenium caudatum* G.Forst.**

Etymology: *caudatum* = with a tail; referring to the caudate pinna apex.

Diagnostic characters: fronds very long (65–90 cm), pinnate with many alternating pinnae. Pinnae at the base of the frond gradually reduce to fan-shape. Sori are close to, and parallel to, the pinna midvein.

Distribution: Malesia, the Solomon Islands, Vanuatu, Fiji, and Australia.

Ecology: montane forests at altitude of 620–1,100 m, usually near ridges.



Plant (SITW07572)

Rhizome and stipe bases
(SITW07572)

Sori (SITW07572)



Pinna base (SITW07572)

***Asplenium cromwellianum* Rosenst.**

Etymology: from the Cromwell Mountains in Papua New Guinea where the type was collected.

Diagnostic characters: fronds pinnate, pinnae deeply cut, with a free acroscopic segment.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a rare species only found in mossy, montane forests above 1,500 m, terrestrial.

Note: newly recorded for the Solomon Islands.



Plant (SITW03355)



Rhizome (SITW10523)



Sori (SITW03355)



Venation (SITW10523)

***Asplenium insulanum* C.W.Chen, nom. nov.**

Basionym: *Scolopendrium durvillei* Bory, Dup. Voy. Bot. 1: 273 t. 37 f. 1. 1828. As *Scolopendrium durvillei*.

Blocking name: *Asplenium durvillei* Mett. ex Kuhn, Linnaea 36: 95, 1869 (= *Asplenium oblongifolium* Colenso).

Etymology: *insulanum* = growing on islands; referring to the distribution of the species.

Diagnostic characters: distinctive in its climbing habit, simple fronds with alternating arrangement on the rhizome, and paired sori.

Distribution: Moluccas, New Guinea, and the Pacific Islands; type from Kosrae in Micronesia.

Ecology: climbing on trees in lowland forests, uncommon.

Note: Bory's original spelling of the specific epithet as "*durvillei*" is regarded here as an orthographic variant (to be corrected) of "*durvillei*". Both species are named after Jules Dumont d'Urville, botanist on Duperrey's Voyage autour du monde.



Plant (SITW11653)

***Asplenium lobulatum* Mett.**

Etymology: *lobulatum* = with small lobes; referring to the lobed pinnae.

Diagnostic characters: can be confused with *A. cromwellianum* but differs in having less incised pinnae and clathrate rhizome scales.

Distribution: Borneo to New Guinea, and the Pacific Islands; type from Hawaii.

Ecology: a rare terrestrial fern growing in damp forests at mid-elevation (ca. 1,000 m).



Adaxial surface of frond, backlight (SITW11653)



Sori (SITW11653)



Rhizome, stipe bases, and coiled frond (SITW11653)



Bud on distal part or adaxial side of midrib (SITW11653)



Plants (SITW06767)

***Asplenium marattioides* (Brack.) C.Chr.**

Etymology: *marattia* = *Marattia*, a fern genus; *oides* = like, resembling; referring to the resemblance of the fronds to some species of *Marattia*.

Diagnostic characters: a very distinct species with long creeping rhizome and dimorphic adult (pinnate) and juvenile fronds (2-pinnate). The fertile pinnae are much narrower than sterile ones.

Distribution: the Pacific Islands; type from Samoa.

Ecology: an uncommon climbing fern usually found in dry forests of Guadalcanal and Malaita below 500 m.

Note: the dissection of the juvenile fronds is variable. This species is morphologically similar to *Asplenium ludens* Baker, *A. stenochlaenoides* Alderw., and *A. teratophylloides* Alderw.; more study is needed.



Juvenile frond (SITW06767)



Rhizome (SITW06767)



Sori (SITW06767)



Sterile frond (SITW06767)



Young frond (SITW06767)



Habitat (SITW11625)



Scales on young frond (SITW11625)



Cross section of midrib (SITW11625)



Venation (SITW11625)

***Asplenium musifolium* Mett.**

Etymology: *musi* = banana; *folium* = leaf; referring to the very large fronds.

Diagnostic characters: can be distinguished from *A. australasicum* by the midribs being rounded abaxially and from *A. oblancoletatum* by having sori extending less than half way from the rachis to the lamina margin.

Distribution: Malesia and the the Solomon Islands; type from the Philippines.

Ecology: an uncommon epiphyte usually growing in high altitude (over 1,000 m) montane forests; a large bird's nest fern in the Solomon Islands.

Note: newly recorded for the Solomon Islands.



Plants (SITWo7577)



Rhizome (SITWo7577)



Pinna base (SITWo7577)



Sori (SITWo7577)

***Asplenium nigrescens* Blume**

Etymology: *nigrescens* = blackish; relationship to the species is unclear.

Diagnostic characters: a very large pinnate *Asplenium* with pinnae somewhat resembling those of *A. polyodon*, but can be easily distinguished from that species by having long creeping rhizomes.

Distribution: Borneo, Sulawesi, Moluccas (type locality), New Guinea, and the Solomon Islands.

Ecology: a low epiphyte only found in mossy forests at altitude around 1,500 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW11176)



Base of frond (SITW07584)



Rhizome (SITW07584)



Sori (SITW07584)

***Asplenium oblanceolatum* Copel.**

Etymology: *oblanceolatum* = narrow and tapering towards the base; referring to the frond shape.

Diagnostic characters: a lowland bird's nest fern resembling *A. australasicum*, but distinguished by its narrow oblanceolate fronds with sori extending from near the rachis almost to the margin.

Distribution: widely distributed from India, China, Malesia, to the Solomon Islands.

Ecology: shares the same habitat with *A. australasicum*, but is less common.

Note: newly recorded for the Solomon Islands.



Plant (SITW10467)



Shortened pinnae at frond base (SITW04946)



Sori (SITW10467)

***Asplenium pellucidum* Lam.**

Etymology: *pellucidum* = clear, translucent; referring to the texture of its laminae.

Diagnostic characters: has shortened pinnae at the base of fronds like *A. caudatum*, but the sori of *A. pellucidum* spread away from the pinna midvein rather than being parallel to it as in *A. caudatum*.

Distribution: Africa, Mascarene Islands (type locality), Asia, Malesia, the Solomon Islands, and Australia.

Ecology: common in low to mid altitude forests (0–800 m).



Plants (SITW06770)



Rhizome (SITW06770)



Sori (SITW06770)



Venation (SITW06770)

***Asplenium polyodon* G.Forst.**

Etymology: *polyodon* = many-toothed; referring to its toothed pinnae.

Diagnostic characters: pinnate fronds with rhomboid or falcate pinnae, cuneate at base. Similar to *A. sancti-christophori* but the latter has pinnae that are wider at the base and less cuneate.

Distribution: widely distributed in Asia, Australasia, and the Pacific Islands; type probably from New Zealand.

Ecology: one of the most common *Asplenium* species at low altitudes, epiphytic or rupestral.



Plant (SITWo4899)



Rhizome scales (SITWo7567)



Sori (SITWo7567)



Adaxial surface of lamina (SITWo7567)

***Asplenium powellii* Baker**

Etymology: named after the British botanist Thomas Powell, who collected the type.

Diagnostic characters: easily recognized by its large, very divided fronds with narrow segments and marginal sori.

Distribution: Moluccas, New Guinea, the Solomon Islands, and Samoa (type locality).

Ecology: only found in high montane forests above 1,000 m, terrestrial, uncommon.



Plants (SITW10534)

***Asplenium sancti-christophori* Christ**

Etymology: from Santa Christobal (an old name for Makira-Ulawa Province of the Solomon Islands).

Diagnostic characters: similar to *A. polyodon*, but *A. sancti-christophori* differs in having pinnae that are wider at the base and less cuneate, less falcate, and the apex is not so narrowly acute.

Distribution: Moluccas, New Guinea (type locality), and the Solomon Islands.

Ecology: a common epiphyte found in both lowland and mid-elevation montane forests below 1,000 m.

Note: when publishing the name, in addition to the direct citation of a specimen from New Guinea, Christ also mentioned another specimen from the Solomon Islands. The Solomon Islands specimen slightly differs from New Guinea specimen by having a more incised pinna margin, more study is needed to confirm whether they are the same.



Rhizome scales (SITW10534)



Sori (SITW10534)



Venation (SITW10534)



Frond apex (SITW10496)



Plant (SITWo4036)



Rhizome scales (SITW11610)



Rhizome (SITW11610)



Sori (SITW11610)

***Asplenium schizocarpum* (Copel.) Copel.**

Etymology: *schizein* = split, divide; *karpos* = fruit; referring to their indusia paired face-to-face.

Diagnostic characters: one of the two *Asplenium* species in the Solomon Islands with paired indusia, but it is much larger than *A. insulanum*.

Distribution: the Philippines (type locality), Indonesia, Papua New Guinea, and the Solomon Islands.

Ecology: a rare species in damp forests, epiphytic on mossy tree trunks near streams.



Plant (SITW11582)



Rhizome and stipe bases (SITW11582)



Sori (SITW11582)



Adaxial surface of pinna, backlight (SITW11582)

***Asplenium tenerum* G.Forst.**

Etymology: *tenerum* = soft; presumably referring to the lamina texture.

Diagnostic characters: fronds pinnate, 10–30 pairs of pinnae, apical pinnae differing from the rest, and not proliferous.

Distribution: widely distributed in the paleotropics; type from one Australian collection but has not been designated yet.

Ecology: a common epiphytic species in low to mid altitudes.

Note: a broad species concept is adopted here; sometimes different varieties are recognized.



Plant (SITW11163)



Scales on rhizome (SITW11163)



Sori (SITW11163)



Pinna bases (SITW11163)

***Asplenium* sp.**

Diagnostic characters: very similar to *A. affine* and can be found in the same habitat, but differs in having less divided fronds (2-pinnate rather than 3-pinnate) and narrow, elongated rhizome scales.

Ecology: epiphytic on mossy tree trunks in damp forests at altitudes below 700 m, less common than *A. affine*.



Plants (SITW05746)



Rhizome (SITW11149)



Sori (SITW11149)



Lamina base, backlight (SITW11149)

***Hymenasplenium unilaterale* (Lam.) Hayata**

Etymology: *unus* = single; *laterale* = on one side; referring to the asymmetric pinnae shape.

Diagnostic characters: filmy texture, dimidiate pinnae and creeping rhizomes distinguish this species from other species in the family.

Distribution: the paleotropics, from Africa to the Pacific Islands; type from Mauritius.

Ecology: usually found in shaded valley bottoms, growing on rocks close to streams.

Note: the name *H. unilaterale* has been widely used in the Paleotropics; however, further study is needed to confirm whether the Solomon Islands plants are identical to the type material.

BLECHNACEAE

Blechnaceae is largely a Southern Hemisphere family. It is characterized by its unique soral morphology, and the circumscription of the family has seldom been questioned. However, its generic classification is uncertain. A recent study classified the family into 24 genera by molecular evidence (Gasper & al., 2016) and this system was adopted by Pteridophyte Phylogeny Group I (PPG I, 2016). However, some of the genera of this finely divided system are not easily recognized by morphology. For practical reasons, here we adopt a 7 genera system proposed by Perrie & al. (2014) but provide the alternative system for each species in the notes.

Seven genera with ca. 265 species worldwide; 2 genera and 8 species in the Solomon Islands.

Plants terrestrial, rupestral or rarely climbing; **rhizomes** creeping, ascending, or erect, sometimes trunk-like; **fronds** mostly monomorphic, sometimes dimorphic, pinnatifid, pinnate or rarely more divided, new fronds often red, veins free to variously reticulate, areoles without included veinlets; **sori** elongated along a sub-costular commissural vein that is parallel to the costa; **spores** reniform, monolete.

Key to genera

- 1a. Rhizomes mostly long creeping, climbing; exindusiate..... *Stenochlaena*
- b. Rhizomes mostly ascending or erect; indusiate..... *Blechnum*

BLECHNUM L.

Etymology: *blechnon* = fern; an ancient name for fern.

Description: terrestrial; rhizomes ascending or erect, rarely long creeping or climbing; fronds pinnatifid to pinnate or rarely more divided; sori parallel to costae, indusiate.



STENOCHLAENA J.Sm.

Etymology: *stenos* = narrow; *chlaena* = covering; referring to their very narrow fertile pinnae.

Description: climbing; rhizomes long creeping; fronds pinnate, strongly dimorphic; sori acrostichoid, exindusiate.





Plant (SITW05636)



Rhizome (SITW11620)



Sori (SITW05636)



Venation (SITW11620)

***Blechnum melanocaulon* (Brack.) T.C.Chambers & P.A.Farrant
subsp. *pallens* T.C.Chambers & P.A.Farrant**

Etymology: *melano* = dark; *caulon* = stalk; *pallens* = pale; referring to its paler stipe than the typical subspecies.

Diagnostic characters: the pinnatifid frond with strongly reduced pinnae at its base.

Distribution: south India, Sri Lanka, Malesia, and the Pacific Islands; type from the Philippines.

Ecology: found in very shady gullies near streams or waterfalls in mountains above 800 m.

Note: two subspecies have been separated mainly by the color of the stipe, and both may be present in the Solomon Islands. This species belongs to the genus *Austroblechnum* Gasper & V.A.O.Dittrich in PPG I (2016).



Plant (SITW10582)



Scales on stipe (SITW10582)



Sori (SITW06893)



Venation (SITW10582)

***Blechnum nesophilum* T.C.Chambers & P.A.Farrant**

Etymology: *nesophilus* = island-loving; referring to the distribution of this species.

Diagnostic characters: could be confused with *B. orientale*, but *B. nesophilum* is dimorphic with its fertile fronds having much narrower pinnae, and it also lacks the reduced pinnae at the base of its fronds.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: it is most frequently found in disturbed ridge habitats at low and middle altitudes.

Note: this species was usually misidentified as *B. capense* (L.) Schtdl. in the past. This species belongs to the genus *Parablechnum* C.Presl in PPG I (2016).



Plant (SITW11027)



Vertical section of rhizome (SITW11027)



Sori (SITW07645)



Reduced pinnae (SITW11027)

***Blechnum orientale* L.**

Etymology: *orientalis* = from the East; referring to the type location of the species.

Diagnostic characters: the similar fertile and sterile fronds and the reduced pinnae at the base of the fronds distinguish it from other *Blechnum* species in the Solomon Islands.

Distribution: one of the most widely distributed species of the genus, from subtropics (Asia) to tropics (Malesia, the Pacific Islands); type from China.

Ecology: a common lowland species, that often occurs in open habitats such as roadsides.

Note: this species belongs to the genus *Blechnopsis* C.Presl in PPG I (2016).



Plant (SITW10437)



Scales on stipe base (SITW10437)



Sori (SITW00346)



Venation (SITW10437)

***Blechnum vittatum* Brack.**

Etymology: *vittatus* = striped lengthwise; referring to the appearance of its pinnae.

Diagnostic characters: easily identified by the blackish scales at the base of its stipes and on the rhizomes.

Distribution: New Guinea and the Pacific Islands; type from Fiji.

Ecology: the most common species in lowland forests.

Note: this species belongs to the genus *Oceaniopteris* Gasper & Salino in PPG I (2016).



Plant (SITW05399)



Rhizome and stipe bases (SITW11629)



Fertile pinnae (SITW11629)



Hairs on rachis (SITW11629)

***Blechnum vulcanicum* (Blume) Kuhn**

Etymology: *vulcanicus* = volcanic; referring to the habitat where the type was collected.

Diagnostic characters: pinnae mostly adnate to rachis, but basal few pairs free and reflexed.

Distribution: Malesia and the Pacific Islands; type from Java.

Ecology: an uncommon species usually found in cool, moist and shaded forests on mountain slopes above 1,000 m.

Note: this species belongs to the genus *Cranfillia* Gasper & V.A.O.Dittrich in PPG I (2016).



Habitat (SITW11086)

***Blechnum* sp.**

Diagnostic characters: similar to *B. vulcanicum* but could be distinguished by having greenish stipes and rachises (rather than reddish), and narrow and twisted scales (rather than broad and straight).

Ecology: a rare species only found in Vanikoro, Santa Cruz Islands at ca. 600 m, growing on vertical cliffs along the streams.

Note: this species is closely related to *B. vulcanicum*. The taxonomy of *B. vulcanicum* and the closely related taxa is complex and further study is needed (Chambers & Farrant, 2001).



Plant (SITW11086)



Rhizome scales and stipe bases (SITW11086)



Adaxial surface of basal pinnae (SITW11086)



Sori (SITW11086)



Venation (SITW11086)



Plant (SITWo7666)

***Stenochlaena milnei* Underw.**

Etymology: named after the Scottish botanist William Grant Milne, who collected the type on the voyage of the sailing ship "HMS Herald".

Diagnostic characters: a climber that differs from *S. palustris* in having larger fertile pinnae (ca. 5 mm wide) and the pinnae bases rounded rather than cuneate.

Distribution: the Philippines, Moluccas, New Guinea, and the Solomon Islands (type locality).

Ecology: occurs in similar habitats to *S. palustris*, but is less common.

Note: a hybrid origin for *S. milnei* had been proposed due to its intermediate morphology between *S. palustris* and *S. cumingii* Holttum (Holttum, 1971). Chambers (2013) suspected that *S. cumingii* might occur in the Solomon Islands although no specimen has been confirmed as *S. cumingii* yet.



Cross section of rhizome (SITWo7666)



Abaxial surface of sterile pinna (SITWo7666)



Adaxial surface of sterile pinna (SITWo7666)



Fertile pinna (SITWo7666)



Sori (SITWo7666)



Habitat (SITW10477)

***Stenochlaena palustris* (Burm.f.) Bedd.**

Etymology: *paluster* = of swampy ground; referring to the habitat where the type was collected.

Diagnostic characters: differs from *S. milnei* in having smaller fertile pinnae (2–3 mm wide) and the pinna bases cuneate rather than rounded.

Distribution: widely distributed from India, southern China, south east Asia, Malesia, Austrasia, to the Pacific Islands; type from Myanmar.

Ecology: a very adaptable species occurring on forest margins and in plantations, from the coast up to about 500 m.



Plants (SITW05421)



Pinna bases (SITW10477)



Venation (SITW10477)



Sori (SITW10477)



Cross section of rhizome (SITW10477)

ATHYRIACEAE

Athyriaceae

Athyriaceae is one of the largest fern families. This family has historically been included in widely circumscribed Woodsiaceae or Dryopteridaceae. Recent molecular phylogenetic studies support the recognition of the athyrioid ferns as a separate family. Athyriaceae comprises three major clades that correspond to the genera (1) *Athyrium*, (2) *Deparia*, and (3) *Diplazium* (Rothfels & al., 2012; Wei & al., 2013).

Three genera with ca. 650 species worldwide; 2 genera and ca. 20 species in the Solomon Islands, 14 of which are listed here.

Plants terrestrial or rupestral, sometimes rheophytic; **rhizomes** short to long creeping, or suberect to erect, bearing scales; **fronds** monomorphic, occasionally bulbiferous, soft-herbaceous to coriaceous, simple to 3-pinnatifid, veins free or if reticulate without free included veinlets; **sori** usually elongate, hooked, or sometimes round, singular or paired back-to-back along the same vein, usually indusiate; **spores** monolete.

Key to genera

- 1a. Rhizomes creeping, scales at stipe base pale..... *Deparia*
- b. Rhizomes erect, scales at stipe base dark brown to black..... *Diplazium*

DEPARIA HOOK. & GREV.

Etymology: *depar* = dish or saucer; referring to the dish-like indusia in some species.

Description: terrestrial or rupestral; rhizomes long creeping, scales pale brown, thin; fronds pinnate to 2-pinnate; veins free, simple or forked; sori rounded or elongate along veins, indusiate.



DIPLAZIUM SW.

Etymology: *diplasios* = double; referring to their often paired sori.

Description: terrestrial; rhizomes erect or decumbent with fronds tufted at the apex, rarely short creeping, with brown to black scales; fronds simple to 3-pinnate, texture chartaceous to thick; veins free or occasionally uniting; sori elongate along the veins, indusiate.





Plants (SITW11609)

Rhizome and stipe bases
(SITW11609)

Sori (SITW05622)

Adaxial surface of lamina
(SITW11609)

***Deparia petersenii* (Kunze) M.Kato**

Etymology: named after the Danish botanist C. W. Petersen who collected the type.

Diagnostic characters: the pale scales at the stipe bases are conspicuous in the field and provide the most distinctive clue to this species.

Distribution: widely distributed in Asia, Malesia, and Oceania; type from China.

Ecology: an uncommon terrestrial species found on slopes near streams at altitudes of 400–800 m.

Note: several infraspecific taxa are sometimes further separated; a broad species concept is adopted here.



Plant (SITW11187)

***Diplazium cominsii* (Baker) C.Chr.**

Etymology: named after the English botanist Richard Blundell Comins who collected the type.

Diagnostic characters: distinguished from other bipinnate species by: free veins, thorny stipules, black margins of the brown scales (with hand lens), and the deeply lobed pinnules.

Distribution: known only from the Solomon Islands.

Ecology: terrestrial in low- to mid-altitude forests (50–850 m), usually found on ridges and slopes.



Stipe base (SITW11187)



Pinnae base (SITW11187)



Sori (SITW11187)



Thorny stipe (SITW11187)



Venation (SITW11187)



Plants (SITW07569)



Scales on stipe (SITW11644)



Buds (SITW11644)



Venation (SITW11644)

***Diplazium cordifolium* Blume**

Etymology: *cor* = heart; *folium* = leaf; referring to the shape of the frond base.

Diagnostic characters: the large simple frond with cordate base is very distinct and can be easily recognized in the field.

Distribution: throughout Malesia eastwards to the Solomon Islands; type from Java.

Ecology: terrestrial on moist slopes in shaded forests at low or medium altitudes; uncommon.



Plants (SITW11052)



Sori on stipe base (SITW10529)



Sori (SITW11052)



Bud near frond apex (SITW05274)

***Diplazium dameriae* Pic.Serm.**

Etymology: named after the Italian botanist Rose Maria Dameri who collected the type.

Diagnostic characters: the narrowly ovate pinnae readily distinguish this from other congeneric species with pinnate fronds in the Solomon Islands.

Distribution: Malesia, Australia (type locality), the Solomon Islands, Vanuatu, Fiji, and Samoa.

Ecology: occasionally found in lowland forests below 500 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW11605)



Scales on stipe base (SITW11605)



Sori (SITW11605)



Pinna bases (SITW11605)

***Diplazium dilatatum* Blume**

Etymology: *dilatatum* = broadened, widened; referring to the wide deltate frond with wide pinnules.

Diagnostic characters: most similar to *D. stipitipinnula* but *D. dilatatum* lacks prickles on the stipes and the veins are free, not uniting.

Distribution: very widely distributed from Asia, Malesia, Australia to the Pacific Islands; type from Java.

Ecology: a rare terrestrial fern found in submontane forests near ridges at ca. 1,000 m.

Note: newly recorded for the Solomon Islands.



Plants (SITW11581)



Scales on stipe (SITW11581)



Venation (SITW11581)



Sori (SITW05733)

***Diplazium esculentum* (Retz.) Sw.**

Etymology: *esculentum* = good to eat; referring to the common use of this species as food.

Diagnostic characters: the large, divided fronds, with the basal pair of veins often uniting between the lobes of the pinnules and being excurrent to the sinus.

Distribution: widely distributed from Asia, Malesia, to Oceania; type from India.

Ecology: a common terrestrial fern found in lowland open grounds and along riverbanks (altitudes < 300 m).

Note: a common vegetable used by Solomon Islanders. Growing wild along riverbanks and stream courses on fertile soil, and also in garden areas. Plants can grow very large with a trunk sometimes over 1 m tall.



Plant (SITW11586)

***Diplazium harpeodes* T.Moore**

Etymology: *harpe* = sickle; *odes* = similar to; referring to the pinnule shape.

Diagnostic characters: could be confused with *D. cominsii*, as both are large 2-pinnate species with deeply incised pinnules. But *D. harpeodes* is distinguished by having smooth stipes (not thorny) and broad scales on the stipe bases.

Distribution: French Polynesia, Samoa (type locality), Tonga, Fiji, and the Solomon Islands.

Ecology: occasionally found in submontane forests at altitudes of 500–1,000 m.

Note: newly recorded for the Solomon Islands.



Sori (SITWo7667)



Cross section of stipe (SITW11586)



Stipe base (SITW11586)



Adaxial surface of pinnules (SITW11586)



Venation (SITW11586)



Plant (SITWo5663)

***Diplazium oblongifolium* (Hook.) Jermy**

Etymology: *oblongifolium* = oblong leaf; referring to the pinna shape.

Diagnostic characters: fronds pinnate, deltoid in outline, usually with 2 or 3 pairs of pinnae; terminal pinna conformal; bulbils usually present at the base of the pinnae.

Distribution: Vanuatu (type locality) and the Solomon Islands.

Ecology: a rare terrestrial fern found near ridges at ca. 1,000 m.

Note: newly recorded for the Solomon Islands. Future study is needed to confirm whether those plants without bulbils are a different species (for which the name *D. bantamense* Blume may apply).



Scales on stipe base (SITW05292)



Sori (SITW05292)



Plant without bulbil (SITW11600)



Bud on pinna base (SITW05292)



Pinna bases of plant without bulbils (SITW11600)



Plant (SITW00132)



Thorny stipe (SITW02994)



Sori (SITW03582)



Vegetative bud on costa (SITW02994)

***Diplazium proliferum* (Lam.) Thouars**

Etymology: *proles* = offspring; *fero* = bearing; referring to the bulbils growing from the adaxial surface of the costa bases.

Diagnostic characters: the very large pinnate fronds (2 m × 0.6 m) together with the bulbils growing adaxially on the costa bases make for easy identification in the field.

Distribution: Africa, Mascarene islands (type locality), Asia, New Guinea, the Solomon Islands, Vanuatu, Fiji, Samoa, and Australia.

Ecology: commonly found near river and stream margins on well drained, alluvial soil in lowland forests below 500 m.

Note: the young fronds of this species are widely used in the Solomon Islands as a vegetable.



Plant (SITW11020)



Rhizome, stipe bases, and young fronds (SITW11020)



Sori (SITW11020)



Venation (SITW11657)

***Diplazium schlechteri* Hieron.**

Etymology: named after the German botanist Rudolf Schlechter who collected the type.

Diagnostic characters: can be distinguished from other 2-pinnate *Diplazium* in the Solomon Islands by having very short sori and black ovate scales on the stipe bases.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon species usually found in high altitude mossy forests above 1,000 m.

Note: newly recorded for the Solomon Islands.



Plants (SITW11641)

***Diplazium squamuligerum* (Rosenst.) Parris**

Etymology: *squama* = scale; *geruli* = carrier; referring to the scales on the stipes, rachises, and costae.

Diagnostic characters: fronds small (usually less than 30 cm long), 2-3 pinnate, fleshy in texture, sometimes bearing bulbils on the rachises or costae.

Distribution: New Guinea (type locality), Australia, the Solomon Islands, and Fiji.

Ecology: a common species usually found close to streams in montane forests above 1,000 m.



Rhizome and stipe bases (SITW11641)



Venation (SITW11641)



Scales on stipe (SITW11641)



Sori (SITW11641)



Adaxial surface of frond (SITW11641)



Plant (SITW11109)

***Diplazium stipitipinnula* Holttum**

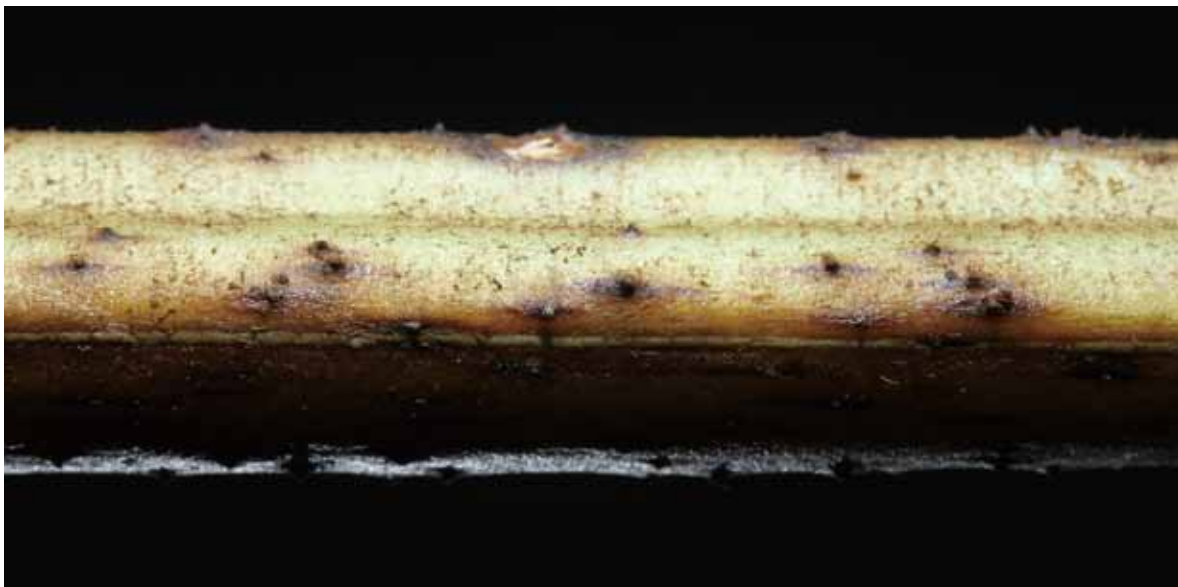
Etymology: *stipitata* = with a stipe; *pinnula* = pinnae; referring to their stalked pinnae.

Diagnostic characters: very similar to *D. proliferum* in the thorny stipes, and thick-textured oblong pinnae and pinnules, but can be distinguished by its 2-pinnate fronds and without the bulbil on the frond axes.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: like *D. proliferum*, occurring in fertile, lowland habitats, but less common.

Note: the young fronds of this species are sometimes used as a vegetable.



Thorny stipe (SITW11109)



Venation (SITW11109)



Pinna base (SITW11109)



Sori (SITW07634)



Cross section of stipe (SITW11109)



Plant (SITW11640)



Rhizome and stipe bases
(SITW11640)



Sori (SITW11640)



Adaxial surface of lamina
(SITW11640)

***Diplazium weinlandii* Christ**

Etymology: named after the German botanist Karl August Friedrich Weinland who collected the type.

Diagnostic characters: a small *Diplazium* with dark green and soft laminae, pinnae rather small and lobed.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a rare species growing on slopes above streams at altitudes of 700–1,000 m.

Note: newly recorded for the Solomon Islands.



Plant (SITW11598)



Scales on young frond (SITW11598)



Sori (SITW11598)



Venation (SITW11598)

***Diplazium* sp.**

Diagnostic characters: can be distinguished by having pinnate fronds with broad, almost entire to slightly serrate pinnae.

Ecology: a very rare species growing on slopes above small streams at ca. 1,000 m.

THELYPTERIDACEAE

Thelypteridaceae is one of the largest fern families and has a predominantly tropical distribution. The generic classification of this family has been a long-standing question; 5–32 genera are proposed depending on the system adopted (e.g., Holttum, 1982; Smith & Cranfill, 2002; He & Zhang, 2012). Several recent efforts have shown several genera such as *Christella*, *Pronephrium*, and *Sphaerostephanos* to be not monophyletic (He & Zhang, 2012; Almeida & al., 2016). The relationships of the Old World species are still largely controversial.

Thirty genera with ca. 1,034 species worldwide; 11 genera and ca. 60 species in the Solomon Islands, 34 of which are listed here.

Plants terrestrial or rupestral, rarely epiphytic; **rhizomes** erect, ascending, or long creeping, with scales at apices; **fronds** clustered or remote, monomorphic or rarely subdimorphic, simple or 1- to 2-pinnate-pinnatifid, herbaceous, papery, or less often leathery, usually covered with unicellular acicular hairs, rarely scaly; **sori** orbicular or shortly linear, indusiate or exindusiate, indusia reniform if present; **spores** mostly monolete, rarely trilete.

Key to genera

- 1a. Fronds 2-pinnate-pinnatifid, veins not reaching margin..... *Macrothelypteris*
- b. Fronds simple to pinnate-pinnatifid, veins reaching margin..... 2
- 2a. Fronds simple, or pinnate with few entire pinnae..... *Pronephrium*
- b. Fronds more divided, or if pinnate then with incised or lobed pinnae..... 3
- 3a. Stipes with conspicuous long hair-like scales throughout..... *Chingia*
- b. Stipes with different scales and only at base..... 4
- 4a. Fronds smelling strongly resinous; basal pinnae distinctly narrowed near the rachis.....
.....*Amblovenatum*
- b. Fronds not smelling strongly; basal pinnae not greatly narrowed near the rachis..... 5
- 5a. Lower pinnae not reduced; veins all free; lamina texture rigid..... *Plesioneuron*
- b. Not above combination of characters..... 6
- 6a. Veins all free..... 7
- b. Veins anastomosing, at least one pair of veins meeting at or below sinus..... 8
- 7a. Rhizome erect, high mountain ferns..... *Coryphopteris*
- b. Rhizome mostly creeping, lowland ferns..... *Christella* (in part)
- 8a. Acicular hairs always abundant, spherical yellow glands scattered over abaxial surface
of pinnae..... *Sphaerostephanos*
- b. Not above combination of characters..... 9
- 9a. Adaxial lamina surface hairy, texture soft..... *Christella* (in part)
- b. Adaxial lamina surface almost glabrous, texture not soft..... *Pneumatopteris*

AMBLOVENATUM J.P.ROUX

Etymology: *amblys* = blunt, obtuse; *vena* = vein; presumably referring to the way that the basal veins from adjacent segments unite at an obtuse angle.

Description: terrestrial; rhizomes erect or short creeping; base of frond without obviously reduced pinnae; fronds large (ca. 2 m long), pinnate-pinnatifid, veins free or united only at sinus; sori indusiate, inconspicuous.



CHINGIA HOLTUM

Etymology: named after the Chinese pteridologist Ren Chang Ching.

Description: terrestrial; rhizomes erect; stipes and rachises densely covered with pale or dark brown hair-like scales; fronds large (2–3 m long), pinnate-pinnatifid, veins uniting below the sinus; sori indusiate or not.



CHRISTELA H.LÉV.

Etymology: named after the Swiss pteridologist Konrad Hermann Heinrich Christ.

Description: terrestrial; rhizomes short to long creeping or suberect; fronds pinnate-pinnatifid, the lowest pinna auricled on the acroscopic base, veins free or with a single united pair, laminae thin and soft in texture; sori indusiate.



CORYPHOPTERIS HOLTUM

Etymology: *Corypha* = a genus of palms; *pteris* = fern; referring to the distinct erect rhizomes of most species of the genus.

Description: terrestrial; rhizomes erect, forming a small trunk, rhizome scales ovate, entire; fronds medium in size, pinnate-pinnatifid, veins free, sessile yellow glands present on abaxial surfaces and/or veins; sori indusiate.



MACROTHELPTERIS (H.ITO) CHING

Etymology: *macro* = large; *Thelypteris* = a genus of ferns; referring to the fronds being larger than *Thelypteris*.

Description: terrestrial; rhizomes decumbent with scales, scale margins hairy; fronds 2-pinnate-pinnatifid with lobed pinnules, veins free; sori with a very small indusium.



PLESIONEURON (HOLTUM) HOLTUM

Etymology: *plesios* = near; *neuron* = nerve, vein; referring to the basal basicopic veins which always arise close to its costae.

Description: terrestrial; rhizomes short creeping or suberect; stipes without reduced pinnae; fronds pinnate-pinnatifid, veins all free; sori indusiate.



PNEUMATOPTERIS NAKAI

Etymology: *pneumato* = air, respiratory; *pteris* = fern; referring to the swollen pneumatophores present in most species of this genus.

Description: terrestrial; rhizomes erect with large, thin scales; stipes with several pairs of reduced pinnae; fronds pinnate-pinnatifid, veins united below the sinus but occasionally free, lamina surfaces not densely hairy, without sessile yellow glands; sori indusiate.



PRONEPHRIUM C. PRESL

Etymology: *pro* = before; *nephros* = kidney; referring to the reniform indusia of some species of this genus.

Description: terrestrial; rhizomes creeping, with narrowly ovate, non-clathrate scales, scale margins entire; fronds simple or pinnate with entire pinnae, veins reticulate; sori along veins.



SPHAEROSTEPHANOS J. SM.

Etymology: *sphaera* = sphere; *stephanos* = crown; referring to the glandular indusia of most species

Description: terrestrial, rarely epiphytic; rhizomes erect, short or long creeping; stipes often with pairs of very reduced pinnae, the transition to these usually abrupt; fronds small to medium (30–100 cm), pinnate to pinnate-pinnatifid, veins united below the sinus, abaxial lamina surfaces usually with yellow sessile glands and short acicular hairs; sori indusiate.





Plant (SITW05293)



Scales on stipe base (SITW11106)



Pinna bases (SITW11106)



Sori (SITW11106)

Amblovenatum pseudostenobasis* (Copel.) C.W.Chen, *comb. nov.

Basionym: *Dryopteris pseudostenobasis* Copel., J. Arnold Arbor. 10: 176–177. 1929.

Etymology: *pseudo* = false; *steno* = narrow; *basis* = basal; referring to the resemblance to *Dryopteris stenobasis* C.Chr., as both species have narrow pinna bases.

Diagnostic characters: the only species of the family in the Solomon Islands that has a strong distinctive smell of wintergreen or pine resin. It is also characterized by the large frond size and the long, narrow, deeply incised pinna lobes.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a common lowland species usually found in disturbed sites (road margins, gardens) and forest clearings, below 300 m, often growing on stream banks.

Note: this species was usually placed under the genus *Amphineuron* Holttum, but this name is illegitimate, being a homonym of *Amphineurion* (A.DC.) Pichon.



Habitat (SITW04074)



Young frond (SITW02971)



Sori (SITW02971)



Adaxial surface of lamina (SITW04074)

***Chingia longissima* (Brack.) Holttum**

Etymology: *longissima* = the longest; referring to the long hair-like scales on the stipe.

Diagnostic characters: a very large species (fronds often over 2 m in length) and distinctive for the extremely scaly stipes and rachises; scales brown.

Distribution: Micronesia, the Solomon Islands, Marquesas, Fiji, and Tahiti (type locality).

Ecology: a less common species than *C. malodora*, but sharing similar habitats.



Plants (SITW11121)



Scales on stipe (SITW11121)



Sori (SITW05231)



Adaxial surface of lamina (SITW11121)

***Chingia malodora* (Copel.) Holttum**

Etymology: *malodora* = malodorous; referring to the bad smell of the plant described by the type's collector, Leonard John Brass.

Diagnostic characters: similar to *C. longissima* in gross morphology but the hair-like scales on the stipes are light-colored.

Distribution: endemic to the Solomon Islands.

Ecology: a common lowland species usually growing along stream margins or near valley bottoms, below 700 m.



Habitat (SITW10525)



Rhizome (SITW03584)



Sori (SITW10525)



Venation (SITW10525)

***Christella dentata* (Forssk.) Brownsey & Jermy**

Etymology: *dentata* = toothed; referring to the incised pinnae.

Diagnostic characters: basal veins always joining well below the sinus, and obvious acicular hairs present on both lamina surfaces and indusia.

Distribution: throughout the Paleotropics; type from Yemen.

Ecology: an uncommon lowland species usually found in disturbed ground such as plantations.



Plants (SITW05625)



Rhizome scales (SITW11097)



Basal pinnae (SITW11097)



Abaxial surface of lamina (SITW11097)

Christella harveyi* (Mett.) Holttum var. *harveyi

Etymology: named after the Irish botanist William Henry Harvey, who collected the type.

Diagnostic characters: a larger species than *C. dentata* with all veins free.

Distribution: New Guinea and the Pacific Islands; type from Fiji.

Ecology: a very common lowland species in plantations, gardens, road margins, and disturbed forests, below 400 m.



Habitat (SITW11156)

***Christella* sp.**

Diagnostic characters: a very distinct species by its very thin laminae and imbricate pinna bases.

Ecology: a rare rupestral species of lowland limestone caves, in dry sites perched on wall sides, but near streams.



Rhizome and stipe bases (SITW11156)



Sori (SITW11156)



Adaxial surface of frond (SITW11156)



Abaxial surface of lamina, backlight (SITW11156)



Pinna bases (SITW11156)



Plant (SITW03433)



Rhizome and stipe bases (SITW07554)



Sori (SITW07554)



Adaxial surface of pinnae (SITW07554)

***Coryphopteris kolombangarae* Holttum**

Etymology: from Kolombangara Island, West Province, the Solomon Islands, where the type was collected.

Diagnostic characters: very similar to *C. pubirachis* var. *major* but differs in smaller plant size and distinctly reduced basal pinnae.

Distribution: endemic to the Solomon Islands.

Ecology: a rare terrestrial species found in high montane mossy forests at altitudes of 1,200–1,650 m.

Note: Holttum (1976) distinguished this species by its narrow stipe scales (0.5 mm wide) but the type specimens clearly show scales as broad as those of *C. pubirachis* var. *major*.



Plant (SITW06954)



Scales on stipe bases (SITW06954)



Sori (SITW06954)



Adaxial surface of lamina (SITW04889)

***Coryphopteris pubirachis* (Baker) Holttum var. *major* Holttum**

Etymology: *pubi* = hairy; *rachis* = rachis of the fronds; *major* = larger; referring to the hairy rachises and large plant size.

Diagnostic characters: very similar to *C. kolombangarae* but differs in larger plant size and only slightly reduced basal pinnae.

Distribution: Papua New Guinea and the Solomon Islands (type locality).

Ecology: a rare terrestrial species found in high montane mossy forests at altitudes of 1,100–1,650 m, usually sharing the same habitat as *C. kolombangarae*.

Note: differs from the typical variety by having larger fronds (up to 40 cm) and less hairy rachises and costae.



Plant (SITW11667)



Scales on stipe bases (SITW11667)



Sori (SITW11667)



Adaxial surface of pinnae (SITW11667)

***Coryphopteris subbipinnata* Holttum**

Etymology: *sub* = approaching, nearly; *bipinnata* = 2-pinnate; referring to its frond division.

Diagnostic characters: most similar to *C. pubirachis* var. *major* but *C. subbipinnata* differs in having more divided fronds, the lowest pinnae with 2 pairs of free pinnules (rather than 1).

Distribution: endemic to the Solomon Islands.

Ecology: a rare terrestrial only recorded from Guadalcanal Island, growing in montane mossy forests at altitudes of 1,100–2,300 m.



Plant (SITW11145)



Scales on stipe base (SITW11122)



Abaxial surface of lamina (SITW11122)



Adaxial surface of lamina, backlight (SITW11122)

***Macrothelypteris polypodioides* (Hook.) Holttum**

Etymology: *Polypodium* = a fern genus; *oides* = similar; referring to the resemblance to a broadly defined *Polypodium* at that time.

Diagnostic characters: similar to *M. torresiana* but differs in having many scales on the abaxial surfaces of the rachises, costae, and costules.

Distribution: widely distributed in Asia, Malesia, Australia, and the Pacific Islands; type from French Polynesia.

Ecology: an uncommon species found in open disturbed sites such as road cuttings, cliffs and riverbeds, below 700 m.



Plants (SITW11071)



Scales on stipe (SITW11071)



Sori (SITW11071)



Venation (SITW11071)

***Macrothelypteris torresiana* (Gaudich.) Ching**

Etymology: named after D. L. Torres who was the vice-governor of the Mariana Islands in the early 19th century.

Diagnostic characters: similar to *M. polypodioides* but scales are present only on the bases of the stipes, young fronds, and rhizome apices.

Distribution: throughout the Paleotropics; type from Mariana Islands.

Ecology: an uncommon species found in open disturbed sites such as riverbeds or road margins, below 1,150 m.



Habitat (SITW11124)



Scales on stipe (SITW07678)



Sori (SITW11124)



Pinna bases (SITW11124)

***Plesioneuron attenuatum* (Brack.) Holttum**

Etymology: *attenuatum* = tapering; referring to the apexes of the pinnae.

Diagnostic characters: basicopic lobes of all pinnae are shorter than the acroscopic lobes, and the stipe scales are up to 2 cm long and very narrow.

Distribution: from New Guinea eastwards to Tahiti (type locality).

Ecology: a common species usually growing on rocky slopes near streams below 1,150 m.



Plant (SITW10504)

***Plesioneuron subglabrum* Holttum**

Etymology: *sub* = nearly; *glabrum* = smooth, without hairs; referring to its nearly glabrous costae and costules.

Diagnostic characters: a distinct species having proximal pinnae much narrowed toward their bases and sori closer to the frond margins.

Distribution: endemic to the Solomon Islands.

Ecology: a very rare species only recorded from Isabel Province, growing on slopes of lowland primary forests at ca. 100 m.

Note: previously only known from the type collection.



Rhizome (SITW10504)



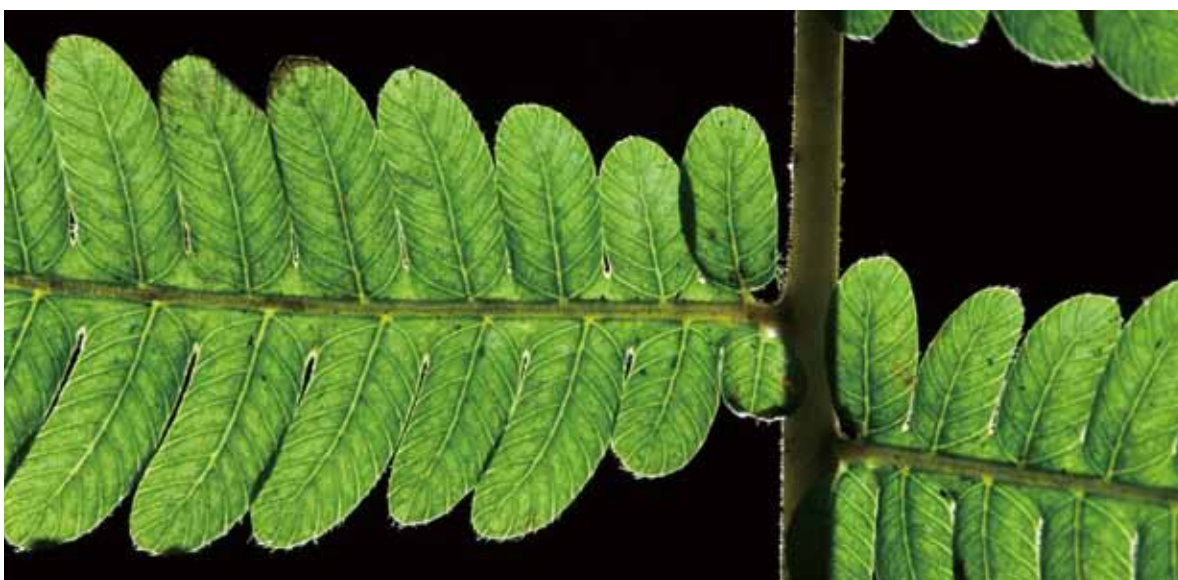
Basal pinnae (SITW10504)



Abaxial surface of lamina (SITW10504)



Sori (SITW10504)



Venation (SITW10504)



Plant (SITW11188)

***Pneumatopteris costata* (Brack.) Holttum**

Etymology: *costata* = prominently ridged; referring to the adaxially prominent costa.

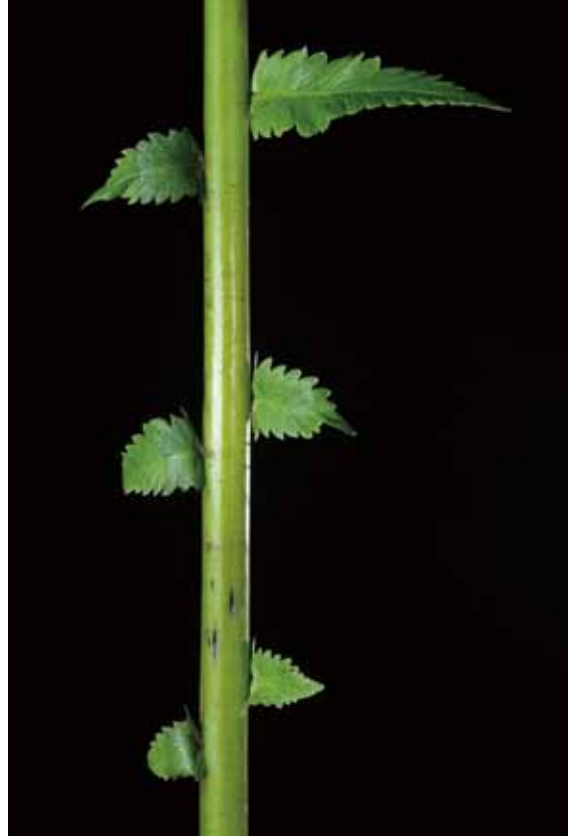
Diagnostic characters: most similar to *P. magnifica* but is smaller (fronds ca. 1 m long). Proximal pinnae gradually reduced to 5 mm long.

Distribution: Malesia, Australia, and the Pacific Islands; type from Fiji.

Ecology: a rare species of lowland to montane forests, usually growing along stream banks below 1,200 m.



Rhizome (SITW11188)



Basal pinnae (SITW11188)



Adaxial surface of lamina (SITW11188)



Sori (SITW11188)



Venation (SITW11188)



Plant (SITWo4057)



Young frond (SITWo4057)



Aerophores (SITW11069)



Venation (SITW11069)

***Pneumatopteris glandulifera* (Brack.) Holttum**

Etymology: *glandulifera* = gland-bearing; referring to the jelly-like mucous present on its young fronds.

Diagnostic characters: the aerophores at the pinnae and lobe bases are the most distinctive feature.

Distribution: the Solomon Islands, Vanuatu, Samoa (type locality), and the Cook Islands.

Ecology: an uncommon species of lowland to montane forests below 1,150 m, usually growing in valley bottoms, close to stream banks.

Note: the young fronds and stipe bases are strongly covered by jelly-like mucous.



Plant (SITWo4068)



Reduced pinnae on stipe (SITW11602)



Rhizome and stipe bases (SITW11602)



Sori (SITWo5370)

***Pneumatopteris imbricata* Holttum**

Etymology: *imbricata* = overlapping like tiles; referring to the basal lobes of the pinnae.

Diagnostic characters: basal lobes of pinnae large and imbricate, and the pinnae are abruptly reduced at the bases of the fronds.

Distribution: Moluccas (type locality), New Guinea, and the Solomon Islands.

Ecology: an uncommon species of damp forests at altitudes of 300–1,100 m, usually growing on rocky stream banks.



Plant (SITW10556)



Proximal part of frond (SITW10556)



Sori (SITW10556)



Venation (SITW10556)

***Pneumatopteris magnifica* (Copel.) Holttum**

Etymology: *magnifica* = great, distinguished; presumably referring to its large fronds.

Diagnostic characters: can be distinguished by its large plant size (fronds over 1.5 m), long and well-spaced pinnae, and many gradually reduced pinnae in the proximal part of each frond.

Distribution: the Solomon Islands, Fiji (type locality), and Samoa.

Ecology: a rare species only recorded from Santa Cruz Islands (but locally common), growing in lowland damp forests near streams.



Plant (SITW10513)



Rhizome and stipe bases (SITW10513)



Sori (SITW10513)



Adaxial surface of pinnae (SITW10513)

***Pneumatopteris rodigasiana* (T.Moore) Holttum**

Etymology: named after the Belgian botanist Émile Rodigas.

Diagnostic characters: a smaller *Pneumatopteris* (lamina to 80 cm long) in the Solomon Islands and can be distinguished by having thin-textured laminae and exindusiate sori.

Distribution: Papua New Guinea and the Pacific Islands; type from Samoa.

Ecology: an uncommon species of lowland to montane forests below 1,200 m, usually growing near streams.



Habitat (SITW11087)

***Pneumatopteris* sp. 1**

Diagnostic characters: can be distinguished by having sori close to the costules and no reduced pinnae on the proximal part of fronds.

Ecology: a very rare species only recorded from Vanikoro, growing on slopes along streams at ca. 500 m.



Rhizome and stipe bases (SITW11087)



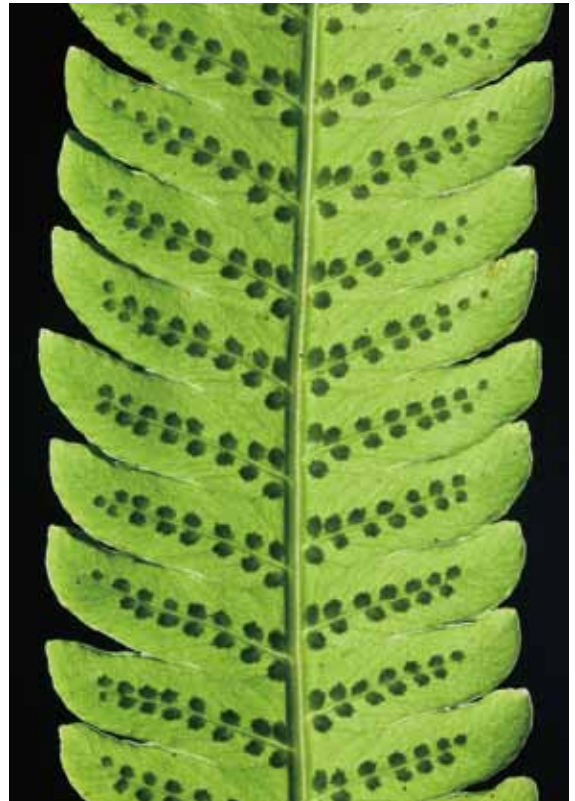
Basal pinnae (SITW11087)



Sori (SITW11087)



Adaxial surface of pinna (SITW11087)



Adaxial surface of pinna, backlight (SITW11087)



Plant (SITW11589)



Rhizome and stipe bases (SITW11115)



Sori (SITW11115)



Basal pinnae (SITW11115)

***Pneumatopteris* sp. 2**

Diagnostic characters: can be distinguished from other *Pneumatopteris* in the Solomon Islands by having basal pinnae narrowed at their base and strongly appressed scales on the stipe bases.

Ecology: a common species of lowland forests, hillsides or valley bottoms below 300 m, often close to streams.



Plant (SITW05305)



Rhizome and stipe bases (SITW04984)



Sori (SITW07640)



Venation (SITW04984)

***Pneumatopteris* sp. 3**

Diagnostic characters: having similar frond texture as *P. rodigasiana* but can be distinguished by being larger (lamina over 1 m long) and sori covered by obviously brown indusia.

Ecology: a common species of lowland forests and forest margins, usually near streams or rivers below 300 m.



Plants (SITW11648)

Rhizome and stipe bases
(SITW11154)

Sori (SITW05643)



Venation (SITW11154)

***Pronephrium beccarianum* (Ces.) Holttum**

Etymology: named after the Italian naturalist Odoardo Beccari who collected the type.

Diagnostic characters: can be easily identified by the simple fronds with distinctive reticulate venation.

Distribution: Moluccas, New Guinea (type locality), the Solomon Islands, and Fiji.

Ecology: an uncommon species of montane forest gullies at altitudes of 500–1,200 m.



Plants (SITW05645)



Bud on pinna base (SITW05645)

Abaxial surface of lamina
(SITW05645)

Sori (SITW05645)

***Pronephrium cuspidatum* (Blume) Holttum**

Etymology: *cuspidatum* = abruptly narrowed into a short rigid point; referring to its pinna apices.

Diagnostic characters: pinnate fronds with ca. 3 pairs of pinnae, with buds present at the base of most pinnae.

Distribution: throughout Malesia and the Solomon Islands; type from Java.

Ecology: a rare species found in submontane ridge forests at ca. 650 m.



Plants (SITW05651)

***Sphaerostephanos braithwaitei* Holttum**

Etymology: named after the English botanist Anthony Forester Braithwaite who collected the type.

Diagnostic characters: similar to *S. heterocarpus* but *S. braithwaitei* differs in being larger (fronds usually over 1.5 m long) and having a distinct dark colored groove on the proximal part of the rachis.

Distribution: endemic to the Solomon Islands.

Ecology: a common terrestrial fern found in lowland to submontane forests on slopes and ridges below 800 m.



Scales on stipe (SITW11593)



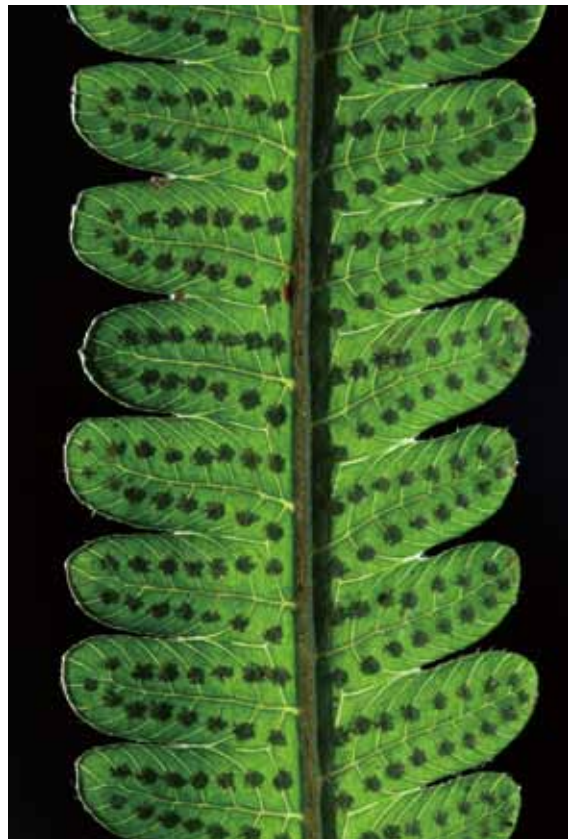
Adaxial surface of lamina (SITW11593)



Sori (SITW05651)



Basal pinna and dark colored groove (SITW05651)



Venation (SITW10464)



Plant (SITW05702)



Rhizome and stipe bases (SITW11594)



Sori (SITW05702)



Venation (SITW11594)

***Sphaerostephanos doodioides* (Copel.) Holttum**

Etymology: *Doodia* = a genus of ferns sometimes included in *Blechnum*; *oides* = similar; referring to the resemblance to *Doodia*.

Diagnostic characters: differs from all other congeneric species of the Solomon Islands in being smaller in size (up to 36 cm tall), and in having slightly dimorphic fronds and unlobed pinnae.

Distribution: the Solomon Islands (type locality), Vanuatu, and New Caledonia.

Ecology: a rare rheophyte of stream banks in lowland forests below 600 m, usually found on limestone boulders.



Plant (SITW11079)



Rhizome and stipe bases (SITW11079)



Sori (SITW11079)



Basal pinnae (SITW11079)

***Sphaerostephanos heterocarpus* (Blume) Holttum**

Etymology: *heterocarpus* = having variably shaped fruits; referring to the variable sorus distribution among the different forms.

Diagnostic characters: a smaller plant (fronds ca. 1 m long) than *S. braithwaitei* with distinctive purplish indusia.

Distribution: widely distributed in Asia, Malesia, Australia, and the Pacific Islands; type from Java.

Ecology: a less common species than *S. braithwaitei* but occurs in similar habitats and sometimes can grow together.

Note: this is a very variable species and several forms have been classified by Holttum (1982).



Habitat (SITW10524)

***Sphaerostephanos invisus* (G.Forst.) Holttum**

Etymology: *invisus* = creeping below other vegetation; referring to the habitat preference.

Diagnostic characters: very similar to *S. unitus* var. *mucronatus* and sharing the same habitat, often growing together at the same site. However, this species can be distinguished by having gradually reduced pinnae (abruptly reduced in *S. unitus* var. *mucronatus*) and exindusiate sori (indusiate in *S. unitus* var. *mucronatus*).

Distribution: Moluccas, New Guinea, New Caledonia, the Solomon Islands, Vanuatu, Fiji, and Polynesia; type from unknown locality.

Ecology: a common species of lowland, disturbed, open ground, including road margins and waste land, below 500 m.



Rhizome (SITW10524)



Pinna bases (SITW05718)



Basal pinna (SITW10524)



Sori (SITW05718)



Venation (SITW10524)



Plant (SITW04004)



Reduced pinnae (SITW11070)



Sori (SITW11070)



Pinna bases (SITW11070)

***Sphaerostephanos polycarpus* (Blume) Copel.**

Etymology: *poly* = many; *carpus* = fruit, sori in ferns presumably referring to its abundant sori.

Diagnostic characters: can be recognized by the many reduced pinnae that occupy the proximal part of the frond.

Distribution: throughout Malesia, the Solomon Islands, and Samoa; type from Java.

Ecology: a common species of lowland gardens, stream margins, road margins, and other open places, below 200 m.



Plant (SITW05652)



Rhizome (SITW05652)



Sori (SITW05652)



Venation (SITW05652)

***Sphaerostephanos scandens* Holttum**

Etymology: *scandens* = climbing; referring to its habit.

Diagnostic characters: this is the only *Sphaerostephanos* with a climbing habit in the Solomon Islands and it can be recognized by the long creeping rhizomes.

Distribution: endemic to the Solomon Islands.

Ecology: an uncommon epiphyte of montane forests, at altitudes of 800–1,400 m.



Plants (SITW07609)



Basal pinnae (SITW00320)



Sori (SITW04991)



Adaxial surface of pinnae (SITW05382)

***Sphaerostephanos unitus* (L.) Holttum var. *mucronatus* (Christ) Holttum**

Etymology: *unitus* = joined, united; *mucronatus* = with a hard sharp-pointed tip; referring to the venation and apex of pinna lobes, respectively.

Diagnostic characters: very similar to *S. invisus*, but *S. unitus* var. *mucronatus* can be distinguished by its abruptly reduced pinnae and indusiate sori.

Distribution: throughout Malesia, Melanesia, Polynesia, and Micronesia; type from Luzon.

Ecology: a very common species found in open ground, grassland, coconut plantations, and secondary forests, below 600 m.

Note: differs from the typical variety by having small yellow glands present only on costules and veins.



Plant (SITW07690)



Scales on young frond (SITW11101)



Sori (SITW07690)



Venation (SITW11101)

***Sphaerostephanos veitchii* Holttum**

Etymology: named after the English horticulturist John Gould Veitch who collected the type.

Diagnostic characters: one of the most common *Sphaerostephanos* in lowland forests and can be distinguished from other species by its unlobed pinnae.

Distribution: New Guinea and the Solomon Islands (type locality).

Ecology: a very common species of lowland and occasionally montane forests, usually found on hillslopes and ridge tops, below 1,300 m.



Plant (SITW11650)

***Sphaerostephanos* sp. 1**

Diagnostic characters: can be recognized by its distinctive long hairs present on adaxial side of both rachises and laminae.

Ecology: a very rare species only recorded near ridges of mossy forests in Guadalcanal at ca. 1,000 m.



Rhizome (SITW11650)



Sori (SITW11650)



Adaxial surface of lamina (SITW11650)



Basal pinnae (SITW11650)



Abaxial surface of lamina (SITW11650)



Plants (SITW11579)

***Sphaerostephanos* sp. 2**

Diagnostic characters: probably the largest species of *Sphaerostephanos* in the Solomon Islands, with fronds often over 2 m long. Lobes of the larger pinnae can have 13–15 pairs of veins.

Ecology: a rare species only recorded from Guadalcanal, growing on gravel river beds and riverbed margins in the lowlands.



Rhizome, stipe bases, and young fronds (SITW11579)



Scales on young fronds (SITW11579)



Pinnae reduce abruptly (SITW11579)



Sori (SITW11579)



Venation (SITW11579)



Plant (SITW11157)



Rhizome, stipe bases, and young fronds (SITW05393)



Reduced pinnae (SITW11157)



Abaxial surface of lamina (SITW11157)

***Sphaerostephanos* sp. 3**

Diagnostic characters: this species has the same rheophytic habitat as *S. doodioides* but differs in having pinnae lobed more than half way to their costae, rather than being only slightly crenate as in *S. doodioides*.

Ecology: a rare species growing on rocky riverbanks in the flood-zone below 700 m.

DIDYMOCHLAENACEAE

Didymochlaenaceae is a monogeneric family containing only one species with a pantropical distribution. Traditionally, this family had been included in other families, e.g., Aspleniaceae, Dennstaedtiaceae, Dryopteridaceae, and Polypodiaceae. Morphologically, Didymochlaenaceae is closest to Dryopteridaceae but differs by having elongate sori, while Dryopteridaceae have rounded sori. The phylogenetic position of Didymochlaenaceae has been resolved only recently, with molecular studies further supporting the recognition of the family (Zhang & Zhang, 2015).

Plants terrestrial; **rhizomes** erect, with red-brown, non-clathrate scales; **fronds** 2-pinnate, oblong-elliptic, pinnules free, dimidiate, resembling those of most *Lindsaea* species, veins free; **sori** close to the acroscopic margin, elongate in the direction of the vein, attached centrally to the pinnule, indusiate; **spores** ellipsoidal to globose, monolete.

DIDYMOCHLAENA DESV.

Etymology: *didymos* = twin or double; *chlaena* = covering; referring to the appearance of its sori.

Description: same as family.





Plant (SITW11621)

***Didymochlaena truncatula* (Sw.) J.Sm.**

Etymology: *truncatula* = truncated; referring to its square-shaped pinnules.

Diagnostic characters: the elliptic-oblong sori and fronds resembling a very large 2-pinnate *Lindsaea* with many pinnae are distinctive.

Distribution: same as family.

Ecology: an uncommon terrestrial fern mostly found in deep ravines of damp, mid-altitude forests (500–800 m).



Young frond with scales (SITW11621)



Scales on stipe (SITW11621)



Adaxial surface of lamina (SITW11621)



Sori (SITW06902)



Adaxial surface of pinnules, backlight (SITW11621)

HYPODEMATIACEAE

Hypodematiaceae is a small fern family distributed in the Old World tropics. The only two genera, *Hypodematium* and *Leucostegia*, were previously considered to belong to the Dryopteridaceae or Tectariaceae and Davalliaceae, respectively. Molecular phylogenetic analyses have shown the close relationship of the two genera (Tsutsumi & Kato, 2006; Schuettpehlz & Pryer, 2007).

Two genera with ca. 22 species worldwide; only 1 species in the Solomon Islands.

Plants epiphytic, rupestral or rarely terrestrial; **rhizomes** short to long creeping, densely covered with scales and hairs or only scales; **fronds** monomorphic, 3- to 4-pinnate, deltoid in shape, covered with hairs (*Hypodematium*) or glabrous (*Leucostegia*), veins free; **sori** indusiate, indusia reniform or cup-shaped; **spores** ellipsoid and monolete.

LEUCOSTEGIA C.PRESL

Etymology: *leuco* = white, pale; *stegia* = cover; referring to the light-colored indusia of the genus.

Description: epiphytic or rarely terrestrial; rhizomes long creeping, covered with both scales and hairs; fronds 3-pinnate; sori indusiate, indusia cup-shaped.





Plant (SITW05413)



Sori (SITW05413)



Rhizome (SITW11158)



Adaxial surface of pinnules (SITW05413)

***Leucostegia pallida* (Mett.) Copel.**

Etymology: *pallida* = pale; referring to the pale green color of the abaxial frond surface.

Diagnostic characters: sharing the gross morphology of some species of Davalliaceae in the the Solomon Islands, but the rhizome of *L. pallida* is covered with both scales and hairs whereas there are only scales in Davalliaceae.

Distribution: throughout Malesia and the Pacific Islands; type from Vanuatu.

Ecology: an uncommon epiphytic species usually found in montane forests below 800 m, especially near streams.

DRYOPTERIDACEAE

Dryopteridaceae is one of the most species-rich families of ferns, comprising over 2,000 species, of which 75% belong to three genera, *Dryopteris* (ca. 400 spp.), *Elaphoglossum* (ca. 600 spp.), and *Polystichum* (ca. 500 spp.). The circumscription of this family has been greatly modified by the results of molecular phylogenetic studies. A classification with three sub-families (i.e., Dryopteridoideae, Elaphoglossoideae, and Polybotryoideae) was proposed by a recent study (Liu & al., 2015).

Twenty-six genera with ca. 2,115 species worldwide; 8 genera and about 21 species in the Solomon Islands, 18 of which are listed here.

Plants terrestrial, rupestral, hemi-epiphytic, or epiphytic; **rhizomes** creeping, ascending or erect, less often scandent or climbing, with non-clathrate scales at apices; **fronds** monomorphic, less often dimorphic, veins pinnate or forked, free to variously reticulate, with or without included veinlets; **sori** rounded and indusiate, or acrostichoid and exindusiate; **spores** reniform, monolete.

Key to genera

- 1a. Sori covering whole abaxial side of fertile fronds..... 2
 - b. Sori discrete..... 5
- 2a. Rhizomes short creeping, terrestrial, epiphytic, or rupestral..... 3
 - b. Rhizomes long creeping, climbing..... 4
- 3a. Fronds simple, veins free..... *Elaphoglossum*
 - b. Fronds pinnate, occasionally simple or 2-pinnatifid, veins reticulate..... *Bolbitis*
- 4a. Veins of sterile pinnae free..... *Arthrobotrya*
 - b. Veins of sterile pinnae reticulate..... *Lomagamma*
- 5a. Veins reticulate..... *Pleocnemia*
 - b. Veins free..... 6
- 6a. Indusia peltate, basal pinnae not basiscopically elongated..... *Polystichum*
 - b. Indusia reniform, basal pinnae sometimes basiscopically elongated..... 7
- 7a. Costae grooved, articulate hairs absent..... *Dryopteris*
 - b. Costae not grooved, articulate hairs present..... *Ctenitis*

ARTHROBOTRYA J.SM.

Etymology: *arthron* = joint; *botrys* = cluster; referring to the bases of the pinnae and pinnules being articulated and the fertile pinnae contracted into clusters.

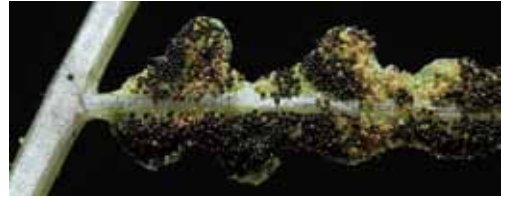
Description: epiphytic or climbing; rhizomes long creeping; fronds 2-pinnate, dimorphic, juvenile fronds pinnate with pinna margins strongly toothed, fertile fronds rarely seen, bullate scales along abaxial side of pinnule midveins, veins free, dividing; sori acrostichoid.



BOLBITIS SCHOTT

Etymology: *bolbos* = bulb; *itis* = having; referring to the proliferous bulbils, a common character of the genus.

Description: terrestrial, rupestral, or epiphytic; rhizomes short creeping; fronds pinnate, occasionally simple or 2-pinnate, sterile and fertile fronds dimorphic, veins reticulate; sori acrostichoid.



CTENITIS (C.CHR.) C.CHR.

Etymology: *kteis* = comb; referring to the narrow fertile pinna lobes, which resemble the teeth of a comb.

Description: terrestrial; rhizomes erect; stipes and rachises densely scaly with long narrow patent scales; fronds 2-pinnate, ovate, with ctenitoid (multicellular) hairs, veins free; sori medial on the veins, indusia inconspicuous.



DRYOPTERIS ADANS.

Etymology: *drys* = oak, *pteris* = fern; referring to the habitat preference of some European species of the genus.

Description: terrestrial; rhizomes erect or obliquely ascending, short, stout, rarely creeping, apex densely scaly; fronds pinnate to 4-pinnate, apex gradually reduced, rarely conformal, texture papery or subleathery, veins free; sori orbicular, indusiate or rarely exindusiate.



ELAPHOGLOSSUM SCHOTT

Etymology: *elaphos* = stag; *glossa* = tongue; referring to the tongue-like shape of fronds.

Description: epiphytic; rhizomes short creeping, scales deltoid, brown; fronds simple, entire, slightly dimorphic, veins free; sori acrostichoid.



LOMAGRAMMA J.SM.

Etymology: *loma* = fringe or border; *gramma* = lined; referring to the reticulate venation of the genus.

Description: climbing; rhizomes long creeping, the stipe partially articulated to the rhizome; fronds 1- to 2-pinnate, dimorphic, fertile fronds rarely seen, veins finely reticulate; sori acrostichoid.



PLEOCNEMIA C.PRESL

Etymology: *pleos* = many; *knemia* = rays; referring to the venation, where free included veinlets radiate in all directions.

Description: terrestrial; rhizomes erect, scaly; fronds 2- to 3-pinnate, basal pinnae always the largest, with enlarged basiscopic lobes or pinnules, veins reticulate, rarely with included free veins; sori on veins in rows, indusiate or not, indusia reniform when present.



POLYSTICHUM ROTH

Etymology: *poly* = many; *stichos* = row; referring to the distribution of sori, which usually forms several rows on the pinnae.

Description: terrestrial or sometimes epiphytic; rhizomes erect, rhizome scales large and broad; fronds 3- to 4-pinnate, oblong-ovate, ultimate segments with acute apices, veins free, dividing; sori in pairs on lobes of ultimate segments, midway between segment midveins and the margins, indusia peltate, small.





Plant (SITW05244)



Sori (SITW05244)



Cross section of rhizome (SITW05244)



Sterile pinnules (SITW05244)

***Arthrobotrya articulata* (Fée) J.Sm.**

Etymology: *articulata* = jointed; referring to the pinnae being articulated to the rachis.

Diagnostic characters: adult sterile fronds are distinctive in their asymmetric pinnules, thin texture and dark green color of the laminae, and the small, bullate, pale brown scales on the abaxial side of the pinnules; rarely seen fertile.

Distribution: the Philippines (type locality), Sulawesi, Moluccas, Papua New Guinea, and the Solomon Islands.

Ecology: an uncommon epiphyte found on hillslopes at altitudes of 300–1,300 m.



Plants (SITW05378)



Rhizome (SITW11132)



Sori (SITW11132)



Bud on pinna apex (SITW11132)

***Bolbitis heteroclita* (C.Presl) Ching**

Etymology: *heterokliton* = different; referring to its variable fronds.

Diagnostic characters: the only *Bolbitis* species with elliptic and unlobed sterile pinnae in the Solomon Islands. The long terminal pinna of juvenile fronds is very distinctive and is often seen proliferating near the apex.

Distribution: throughout the Paleotropics; type from the Philippines.

Ecology: a common species found in lowland to mountain forests, often near rivers or streams.



Plants (SITW03065)



Sori (SITW10547)



Bud near pinna apex (SITW00110)



Venation (SITW10547)

***Bolbitis quoyana* (Gaudich.) Ching**

Etymology: named after the French zoologist Jean René Constant Quoy who served as surgeon onboard the *Uranie* on the Pacific voyage of Freycinet (1817–1820).

Diagnostic characters: can be confused with *B. rivularis* but differs in being a lowland species, often in quite dry forests. Also, when fresh, the frond texture is thin, rather than succulent.

Distribution: Australia, Malesia, and the Pacific Islands; type from Moluccas.

Ecology: a very common species found in lowland forests, forest margins or scrubs, usually growing along stream banks below 500 m.



Plants (SITW11051)



Rhizome (SITW11587)



Sori (SITW11587)



Abaxial surface of pinna, backlight (SITW11587)

***Bolbitis rivularis* (Brack.) Ching**

Etymology: *rivularis* = waterside; referring to the habitat preference of the species.

Diagnostic characters: differs from *B. quoyana* in having less pairs of pinna and a succulent frond texture.

Distribution: New Guinea, the Solomon Islands, Vanuatu, and Fiji (type locality).

Ecology: a less common species than *B. quoyana*, usually found in very damp shaded gullies near streams at altitudes of 500–900 m.

Note: NMNS (2008) regarded this species as a hybrid between unknown parents, because of its abnormal spores.



Plant (SITW02972)



Sori (SITW02972)



Scaly stipe (SITW02972)

***Ctenitis aciculata* (Baker) Ching**

Etymology: *aciculata* = needle-shape; referring to the dense needle-like scales on the stipes and rachises.

Diagnostic characters: can be recognized by its very densely scaly stipes and rachises, the scales are very long and fine.

Distribution: throughout Malesia and the Solomon Islands; type from Sarawak.

Ecology: a rare species only found in damp forests, usually growing near streams.



Plant (SITW04957)



Rhizome scales (SITW11658)



Sori (SITW11140)



Adaxial surface of lamina, backlight (SITW11140)

***Dryopteris arborescens* (Baker) Kuntze**

Etymology: *arborescens* = becoming or tending to be of tree-like dimensions; presumably referring to the large fronds of the plants.

Diagnostic characters: fronds usually over 1.5 m in length, 3-pinnate, pinnae alternate, the first pinnules always on the acroscopic side, sori indusiate.

Distribution: the Solomon Islands, Fiji, and Samoa (type locality).

Ecology: a rare species found in damp forests at altitudes of 700–1,000 m.

Note: very similar to *D. maxima* (Baker) C.Chr. from Fiji and they probably are the same species.



Habitat (SITW11133)



Scales on stipe base (SITW11133)



Sori (SITW11133)



Adaxial surface of lamina (SITW11133)

***Dryopteris hasseltii* (Blume) C.Chr.**

Etymology: named after the Dutch botanist Jan Conrad Adriaan van Hasselt.

Diagnostic characters: could be confused with *D. arborescens*, with both sharing the character of 3-pinnate fronds, but *D. hasseltii* is a much smaller species (frond usually less than 1 m long) with exindusiate sori.

Distribution: widely distributed from Asia, Malesia, Australia, and the Pacific Islands; type from Java.

Ecology: a rare terrestrial species usually found in primary montane forests at altitudes of 800–1,200 m.

Note: the Solomon Islands plants were previously identified as *D. odontophora* Copel., a synonym of *D. hasseltii*.



Plant (SITW11616)

***Dryopteris nodosa* (C.Presl) Li Bing Zhang**

Etymology: *nodosa* = knotty; referring to the nodose hairs present at the junction of pinnae and pinnules.

Diagnostic characters: distinctive in the swollen nodes where the pinnae branch from the rachis.

Distribution: Malesia, the Solomon Islands, and Fiji; type from Java.

Ecology: an uncommon terrestrial species found in high montane mossy forests above 1,000 m.



Scales on stipe base (SITW11616)



Pinna bases (SITW11616)



Swollen node (SITW06950)



Sori (SITW06950)



Venation (SITW11616)



Plant (SITW04931)



Rhizome and young frond (SITW01015)



Sori (SITW06944)



Adaxial surface of lamina (SITW01015)

***Dryopteris papuana* C.Chr.**

Etymology: *papuana* = from Papua New Guinea, where the type was collected.

Diagnostic characters: the long creeping rhizomes and epiphytic habit are unique characters among *Dryopteris* in the Solomon Islands.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon species of high altitude, mossy forests above 1,000 m.



Plants (SITW00848)



Rhizome (SITW11619)



Fertile (right) and sterile (left) fronds (SITW04891)



Lamina base (SITW11619)

***Elaphoglossum blumeanum* (Fée) J.Sm.**

Etymology: named after the German-Dutch botanist Charles Ludwig de Blume.

Diagnostic characters: distinguished from *E. novoguineense* by having narrower sterile fronds, less than 2 cm in width, whereas they are 3–7 cm wide in *E. novoguineense*.

Distribution: throughout Malesia and the Solomon Islands; type from the Philippines.

Ecology: a less common species than *E. novoguineense*, but similarly occupying montane ridge forests.



Plants (SITW11147)

***Elaphoglossum novoguineense* Rosenst.**

Etymology: *novoguineense* = from Papua New Guinea, where the type was collected.

Diagnostic characters: the larger of the two *Elaphoglossum* species in the Solomon Islands, and with thicker laminae, wider fronds (3–7 cm) and stouter stipes.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: a common species found on ridges in montane forests at altitudes of 500–1,500 m.

Note: close to the widespread species *E. callifolium* (Blume) T.Moore (type locality from Java). Further study is needed to confirm the relationship of these two species.



Rhizome and stipe bases (SITW11147)



Lamina base, backlight (SITW11147)



Sori (SITW11147)



Scales on young frond (SITW11147)



Lamina apex, backlight (SITW11147)



Plant (SITW10466)

***Lomagramma cordipinna* Holttum**

Etymology: *cordi* = heart shaped; *pinna* = pinnae; referring to the base of the pinnae being cordate.

Diagnostic characters: the only *Lomagramma* species in the Solomon Islands with broad pinnae (sterile pinnae over 3 cm wide) and cordate pinna bases.

Distribution: the Solomon Islands, Fiji, and Samoa (type locality).

Ecology: a common species of lowland to mountain forests below 800 m.

Note: newly recorded for the Solomon Islands.



Rhizome and young frond (SITW10466)



Cross section of rhizome (SITW10466)



Sori (SITW10466)



Pinna bases (SITW10466)



Venation (SITW10466)



Plant (SITW11050)



Cross section of rhizome (SITW10539)



Sori (SITW11050)



Venation (SITW10539)

***Lomagramma polyphylla* Brack.**

Etymology: *polyphylla* = with many leaf-segments; referring to its 2-pinnate fronds.

Diagnostic characters: can be recognized in the field by its 2-pinnate fronds. Similar in gross morphology to *Arthrobotrya* but can be distinguished by having reticulate venation.

Distribution: the Solomon Islands, Vanuatu, Fiji (type locality), and Tonga.

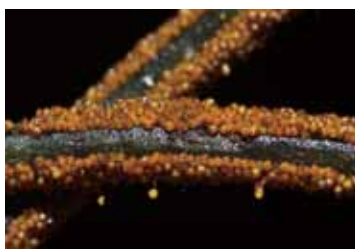
Ecology: a rare epiphyte (but locally common in Vanikoro) growing in damp lowland forests.



Plants (SITW05344)



Rhizome (SITW11178)



Sori (SITW05704)



Venation (SITW11178)

***Lomagramma sinuata* C.Chr.**

Etymology: *sinuata* = having a wavy margin; referring to the wavy margins of its pinnae.

Diagnostic characters: most similar to *L. brassii* Holttum (not shown here), but *L. sinuata* has entire or sinuous pinna margins and sparsely scaly rachises, whereas *L. brassii* has dentate pinna margins and densely scaly rachises.

Distribution: Malesia and the Pacific Islands; type from Sulawesi.

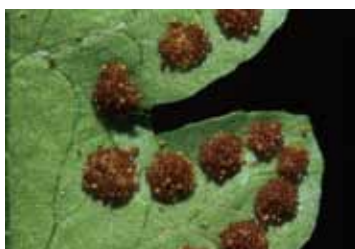
Ecology: a common species sharing the habitat of lowland forests below 700 m with *L. cordipinna*.



Plant (SITW10551)



Cross section of stipe (SITW10551)



Sori (SITW11108)



Venation (SITW10551)

***Pleocnemia dahlia* (Hieron.) Holttum**

Etymology: named after the Swedish botanist Anders Dahl, who collected the type.

Diagnostic characters: could be confused with *P. leuzeana* but differs in having smaller fronds less than 1.5 m long and exindusiate sori distributed near the lamina margins.

Distribution: Papua New Guinea (type locality), the Solomon Islands, and Vanuatu.

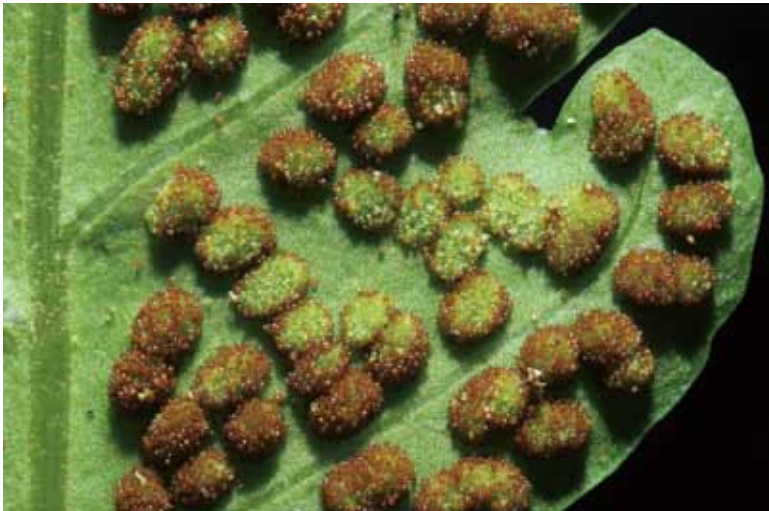
Ecology: the most common species of the genus found in lowland forests, forest margins and disturbed forests below 400 m.



Plant (SITW10428)



Scales on stipe base (SITW10428)



Sori (SITW11068)



Venation (SITW11068)

***Pleocnemia irregularis* (C.Presl) Holttum**

Etymology: *irregularis* = irregular, not arranged in a pattern; referring to its irregularly distributed sori.

Diagnostic characters: can be distinguished by its less divided (2-pinnatifid) fronds and irregularly distributed sori.

Distribution: widely distributed through Asia, Malesia, and the Pacific Islands; type from the Philippines.

Ecology: an uncommon species growing in lowland gullies below 500 m.



Plant (SITW11585)



Sori (SITW11585)



Scales on stipe (SITW11585)



Adaxial surface of pinna (SITW11585)

***Pleocnemia leuzeana* (Gaudich.) C.Presl**

Etymology: named after the French botanist Joseph Philippe François de Leuze.

Diagnostic characters: a very large species with fronds over 4 m in length, 2 m in width, 3-pinnate in the basal pinnae, 2-pinnate in the middle pinnae.

Distribution: East Malesia, the Solomon Islands, Fiji, and Samoa; type from Moluccas.

Ecology: an uncommon species found in damp, shaded gullies of lowland forests below 700 m.



Plant (SITW05372)



Scales on stipe (SITW11138)



Young sori (SITW11614)



Adaxial surface of lamina (SITW05372)

***Polystichum moluccense* (Blume) T.Moore**

Etymology: *moluccense* = from Moluccas in Indonesia, where the type was collected.

Diagnostic characters: a very scaly species, with pale brown scales throughout the stipes, rachises, costae, and costules.

Distribution: Moluccas (type locality), Papua New Guinea, the Solomon Islands, and Fiji.

Ecology: a common species usually found as a low epiphyte on tree ferns in damp forests at altitudes of 650–1,500 m.

NEPHROLEPIDACEAE

The species of Nephrolepidaceae are among the most globally popular horticultural ferns, with most cultivars derived from hybridization of two widespread species, *Nephrolepis biserrata* and *N. cordifolia* (L.) C.Presl. In nature, Nephrolepidaceae is a small family with most extant species distributed in the tropics. A recent study has shown that the family originated in the forests of the Laurasian tropical belt during the Eocene, and from there two main lineages diverged and dispersed, one to the Neotropics and the other to Asia–Australasia (Hennequin & al., 2010).

One genus with ca. 19 species worldwide; 5 species in the Solomon Islands and are listed here.

Terrestrial, epiphytic or rupestral; **rhizomes** are composed of two elements: erect, frond-bearing parts, and creeping, root-bearing runners; **fronds** distant or tufted, pinnate, veins forked, free; **sori** terminal on a veinlet, indusia rounded, reniform or lunulate; **spores** monolete.

NEPHROLEPIS SCHOTT

Etymology: *nephros* = kidney; *lepis* = scale; referring to the kidney-shaped indusia.

Description: same as family.





Plants (SITW10456)



Scales on stipe base (SITW10456)



Sori (SITW10535)



Pinna bases, backlight (SITW10535)

***Nephrolepis biserrata* (Sw.) Schott**

Etymology: *bi* = two; *serrata* = serrated; referring to the pinna margin.

Diagnostic characters: a variable species in its frond size and width of pinnae, but can be distinguished by having submarginal sori, elongated fronds, and pinnae without basal auricles.

Distribution: Pantropical; type from Mauritius.

Ecology: a very common lowland species below 900 m, easily found in open, disturbed forests, growing epiphytically or terrestrially.



Habitat (SITW10544)



Rhizome (SITW10454)



Sori (SITW10454)



Pinna bases, backlight (SITW10454)

***Nephrolepis brownii* (Desv.) Hovenkamp & Miyam.**

Etymology: named after the British botanist Robert Brown, who collected the type.

Diagnostic characters: a distinct species with scales and hairs densely covering the both abaxial and adaxial sides of the costae.

Distribution: widespread in the Paleotropics; type from Australia.

Ecology: a very common species found in lowland open ground and forest margins below 700 m.

Note: another similar species, *N. hirsutula* (G.Forst.) C.Presl, might also present in the Solomon Islands; it differs from *N. brownii* by having the adaxial side of the costae glabrous.



Habitat (SITW11637)



Scales on stipe base (SITW11637)



Sori (SITW11637)



Pinna bases, backlight (SITW11637)

***Nephrolepis dicksonioides* Christ**

Etymology: *dicksonia* = the fern genus *Dicksonia*; *oides* = like, similar; referring to the resemblance of its fertile part to the fern genus *Dicksonia*.

Diagnostic characters: can be confused with *N. biserrata* when sterile but distinguished by the deeply incised fertile pinnae.

Distribution: Malesia and the Solomon Islands; type from Sulawesi.

Ecology: a common species found at montane altitudes of 800–1,350 m, growing epiphytically or terrestrially.

Note: the Solomon Islands plants have sometimes been identified as *N. rosenstockii* Brause, a name based on a New Guinean type, but it is a synonym of *N. dicksonioides*.



Plants (SITW11135)



Rhizome and stipe bases (SITW11135)



Sori (SITW06942)



Adaxial surface of lamina, backlight (SITW11135)

***Nephrolepis lauterbachii* Christ**

Etymology: named after the German explorer and botanist Carl Adolf Georg Lauterbach, who collected the type.

Diagnostic characters: the smallest of the *Nephrolepis* species in the Solomon Islands and distinguished by the small fronds (ca. 30 cm long) and pinnae, the wiry stoloniferous roots and the slender stipes and rachises.

Distribution: New Guinea (type locality), Moluccas, and the Solomon Islands.

Ecology: a very common species at higher altitudes of 600–1,600 m, usually found near ridges.



Plant (SITW10455)



Rhizome and stipe bases (SITW10455)



Abaxial surface of lamina (SITW10455)



Adaxial surface of lamina, backlight (SITW10455)

***Nephrolepis obliterated* (R.Br.) J.Sm.**

Etymology: *obliteratus* = erased, omitted; presumably referring to the shape of the pinnae base.

Diagnostic characters: a distinctive species usually found epiphytically with long, drooping fronds. Differs from *N. biserrata* by having almost glabrous costae and marginal sori.

Distribution: Moluccas, New Guinea, Australia (type locality), and the Pacific Islands.

Ecology: a very common species from lowland to montane forests at altitudes of 0–900 m.

LOMARIOPSIDACEAE

Lomariopsidaceae was previously a larger family including other genera with dimorphic fronds and acrostichoid sori such as *Bolbitis*, *Elaphoglossum* and *Lomagramma*. These are nowadays placed in the Dryopteridaceae based on the results of molecular phylogenetic analyses (Christenhusz & al., 2013; Liu & al., 2015). The recircumscribed Lomariopsidaceae is a small pantropical family mainly distributed in Asia, Africa, and the Pacific Islands, with close affinity to Nephrolepidaceae. Very recently, *Dryopolystichum* was placed within Lomariopsidaceae by molecular evidence (Chen & al. 2017b).

Five genera with ca. 70 species worldwide; 3 genera and 4 species in the Solomon Islands, 3 of which are listed here.

Plants terrestrial, climbing, or epiphytic; **rhizomes** ascending or long creeping, densely covered with scales; **fronds** monomorphic or dimorphic, 1-pinnate to 1-pinnate-pinnatifid, pinnae articulate to rachis or not, veins free; **sori** indusiate or not, discrete or acrostichoid; **spores** monolete, elliptic or orbicular.

Key to genera

- 1a. Plants epiphytic, fronds strongly dimorphic, sori acrostichoid..... *Lomariopsis*
- b. Plants terrestrial, fronds monomorphic, sori discrete..... 2
- 2a. Fronds pinnate, pinnae articulate to rachis..... *Cyclopettis*
- b. Fronds pinnate-pinnatifid, pinnae not articulate..... *Dryopolystichum*

CYCLOPETTIS J.SM.

Etymology: *cyclo* = circle; *pelte* = shield; referring to the shape of indusia of some species of the genus.

Description: terrestrial; rhizomes erect, covered with scales on rhizome apices and stipes; fronds 1-pinnate, pinnae alternate; sori orbicular, indusiate or exindusiate.



DRYOPOLYSTICHUM COPEL.

Etymology: *dryo* = fern genus *Dryopteris*; *polystichum* = fern genus *Polystichum*; presumably referring to the combination of the peltate indusia of *Polystichum* with the frond dissection of *Dryopteris*.

Description: terrestrial; rhizomes erect, scales large; fronds 2-pinnate, veins free; sori along pinnule lobes, between margin and midvein, indusia round, peltate, glabrous.



LOMARIOPSIS FÉE

Etymology: *lomariopsis* = *Lomaria*-like; referring to the similarity with the fern genus *Lomaria*.

Description: climbers; rhizomes long creeping, dorsiventral, covered with scales; fronds 1-pinnate, strongly dimorphic; sori acrostichoid.





Plant (SITW03085)



Scales on abaxial side of basal part of midrib (SITW03085)



Sori (SITW03085)



Abaxial surface of pinnae, backlight (SITW03085)

***Cyclopeltis novoguineensis* Rosenst.**

Etymology: *novoguineensis* = from New Guinea, where the type was collected.

Diagnostic characters: a very distinctive species that can be recognized by the large lobes at the base of the pinnae that overlap the rachis. The absence of indusia separates it from the superficially similar *Nephrolepis*.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a very common lowland forest species below 200 m, usually found on coral limestone.



Plant (SITW10443)

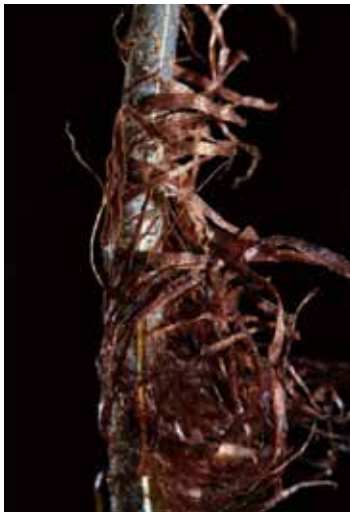
***Dryopolystichum phaeostigma* (Ces.) Copel.**

Etymology: *phaeo* = swarthy, brown; *stigma* = point, spot; presumably referring to the dark sori.

Diagnostic characters: fronds 2-pinnate, pinnae lobed to midrib, basiscopic lobes of the basal pinnae not enlarged.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a very rare species that has been collected only from lowland forests of Isabel, always growing along streams.



Scales on stipe base (SITW10443)



Sori (SITW10443)



Adaxial surface of pinnae (SITW10443)



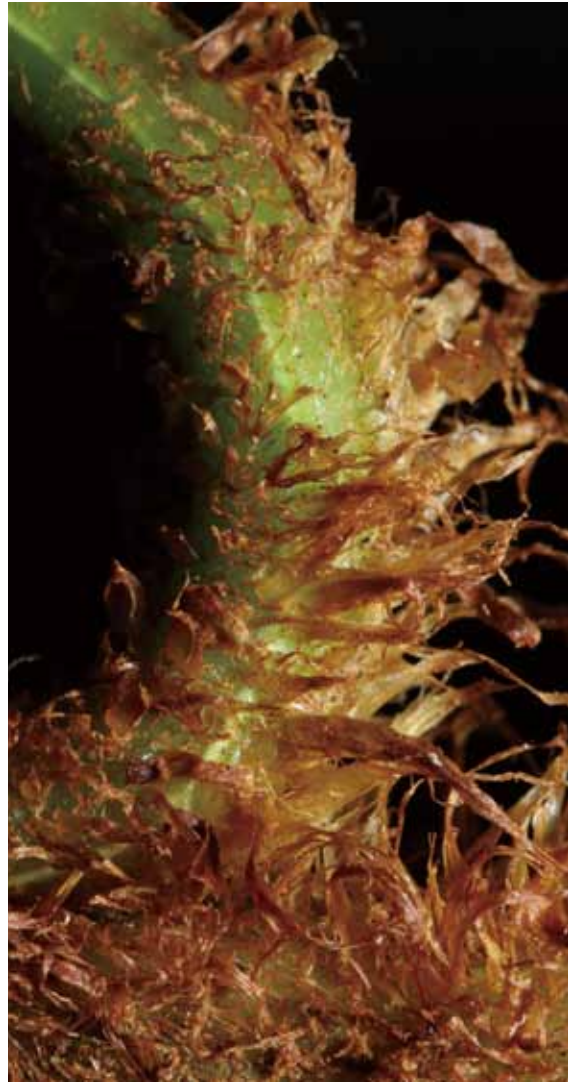
Vertical section of rhizome (SITW10443)



Venation (SITW10443)



Habitat (SITW03449)



Scales on stipe base (SITW07573)

***Lomariopsis oleandrifolia* (Brack.) Mett.**

Etymology: *oleandra* = oleander-like; *folia* = leaf; referring to the resemblance to the flowering plant oleander.

Diagnostic characters: a larger epiphytic species in the Solomon Islands and is distinctive for the acuminate pinna apices and light-brown rhizome scales.

Distribution: Fiji (type locality) and the Solomon Islands.

Ecology: an uncommon epiphyte found in dense montane forests on hillslopes and in gullies at altitudes of 500–900 m.

Note: this species is near *L. intermedia* (Copel.) Holttum from New Guinea. Further study is needed to confirm the distinctness of these two species.



Cross section of rhizome (SITW11127)



Pinna base (SITW11127)



Sori (SITW07573)



Fertile pinnae (SITW03449)

TECTARIACEAE

Tectariaceae is a pantropical fern family with a complicated taxonomic history. Several genera such as *Ctenitis*, *Dryopsis*, and *Lastreopsis* previously thought to belong to Tectariaceae have been transferred to Dryopteridaceae as the result of molecular phylogenetic studies. Molecular evidence also suggests the inclusion of several small genera, such as *Ctenitopsis*, *Hemigramma*, *Heterogonium*, *Psomiocarpa*, *Quercifilix*, *Stenosemia*, and *Tectaridium*, in a broadly circumscribed *Tectaria* (Ding & al., 2014). Additionally, another two genera (*Draconopteris* and *Malaiiflix*) were identified and the inclusion of *Arthropteris* in Tectariaceae was suggested (Zhang & al., 2016).

Seven genera with ca. 250 species worldwide; 2 genera and ca. 25 species in the Solomon Islands, 20 of which are listed here.

Plants terrestrial, rupestral or climbing; **rhizomes** erect or creeping, scaly at apex; **fronds** monomorphic to strongly dimorphic, simple or variously divided, veins free or reticulate with included veinlets; **sori** mostly orbicular, sometimes elongate or acrostichoid, indusiate or exindusiate, indusia reniforme where present; **spores** monolete.

Key to genera

- 1a. Plants climbing, rhizomes long creeping, stipes articulate..... *Arthropteris*
- b. Plants terrestrial or rupestral, rhizomes short creeping or erect, stipes not articulate
..... *Tectaria*

ARTHROPTERIS J.SM.

Etymology: *arthron* = joint; *pterus* = fern; referring to their fronds and pinnae being articulate.

Description: climbing; rhizomes long creeping; fronds pinnate to 2-pinnatifid, stipes articulated to phyllopodium, veins free or rarely reticulate; sori circular with indusia reniform or absent.



TECTARIA CAV.

Etymology: *tectum* = roof; referring to the roof-like indusia in some species.

Description: terrestrial or rupestral; rhizomes erect or short creeping; fronds simple to 3-pinnate, basal pinnae often with enlarged basispic lobes or pinnules; sori scattered over abaxial surface of laminae, indusiate or exindusiate.





Plant (SITW10515)



Rhizome and frond base (SITW10515)



Sori (SITW10515)



Venation (SITW10515)

***Arthropteris palisotii* (Desv.) Alston**

Etymology: named after the French botanist A. M. F. J. Palisot de Beauvois, who collected the type.

Diagnostic characters: climbing habit with pinnate fronds articulate to long creeping rhizomes.

Distribution: through the Old World tropics and the Pacific Islands; type from Madagascar.

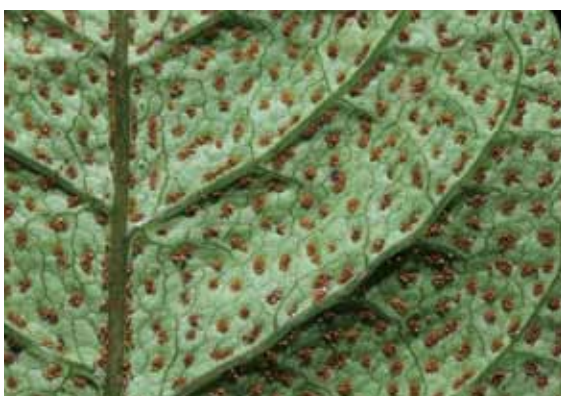
Ecology: climbing tree trunks in lowland primary forests (<500 m), creeping over boulders when juvenile, rare.



Plant (SITWo7629)



Stipe bases (SITW10465)



Sori (SITW11110)



Bud on pinna base (SITW11110)

***Tectaria angulata* (Willd.) Copel.**

Etymology: *angulata* = somewhat angled; referring to the shape of its fronds.

Diagnostic characters: one of the *Tectaria* species with less divided fronds, usually with only three pinnae per frond, and sometimes even simple but lobed at the base.

Distribution: Peninsula Thailand, Malesia, and the Solomon Islands; type from Java.

Ecology: a common lowland species below 500 m, usually found growing on rocks near streams.



Plant (SITW04050)



Scales on stipe (SITW04050)



Abaxial surface of lamina (SITW04050)



Adaxial surface of lamina (SITW04050)

***Tectaria aspidioides* (C.Presl) Copel.**

Etymology: *aspidioides* = resembling the fern genus *Aspidium*, a synonym of *Tectaria*.

Diagnostic characters: the ovate fronds with elongated pinnae distinguish it from other *Tectaria* species in the Solomon Islands.

Distribution: the Philippines (type locality), Sulawesi, and the Solomon Islands.

Ecology: a rare terrestrial fern usually found in damp forests near streams at ca. 700 m.

Note: newly recorded for the Solomon Islands.



Plants (SITW07632)



Rhizome and stipe bases
(SITW10553)



Fertile pinnae (SITW07632)



Bud on pinna base (SITW07632)

***Tectaria aurita* (Sw.) S.Chandra**

Etymology: *aurita* = with ears, long-eared; presumably referring to the elongated basiscopic segments of the basal pinnae.

Diagnostic characters: a very distinct species with strongly dimorphic fronds; the segments of the fertile fronds are very narrowed and covered with sori on their abaxial surfaces.

Distribution: throughout Malesia, the Solomon Islands, and Vanuatu; type from Java.

Ecology: a rare species usually found growing on rocky stream banks in lowland forests.



Plants (SITW05632)



Scales on stipe base (SITW05632)



Adaxial surface of lamina (SITW05632)



Buds on pinna bases (SITW05632)

***Tectaria bamleriana* (Rosenst.) C.Chr.**

Etymology: named after the German missionary Georg Bamler who collected the type.

Diagnostic characters: a rather small *Tectaria* (fronds ca. 30 cm long) with a pinnate frond deltoid in shape. Pinna bases are auriculate and have buds.

Distribution: Malesia and the Solomon Islands; type from New Guinea.

Ecology: a very rare species only recorded from primary forests of Isabel at ca. 700 m, growing on damp slopes near streams.

Note: newly recorded for the Solomon Islands.



Plant (SITW10489)



Sori (SITW10489)



Adaxial surface of lamina (SITW00642)



Venation (SITW10489)

***Tectaria christovalensis* (C.Chr.) Alston**

Etymology: *christovalensis* = from Santa Cristobal Island (now Makira) in the Solomon Islands, where the type was collected.

Diagnostic characters: a similar species to *T. angulata* but with larger basiscopic lobes on the basal pinnae; thus the fronds are palmatifid.

Distribution: New Guinea and the Solomon Islands (type locality).

Ecology: an uncommon species found along stream banks or on rock walls above streams, below 300 m.



Plant (SITW11094)



Scales on stipe base (SITW11094)



Venation and sorus distribution (SITW11017)



Pinna bases (SITW11094)

***Tectaria crenata* Cav.**

Etymology: *crenata* = notched, with small rounded teeth; referring to its lamina margin.

Diagnostic characters: very similar to *T. repanda* but can be distinguished by its larger size (fronds usually over 1 m long), broader pinnae (up to 8 cm wide) and less dimorphic sterile and fertile fronds.

Distribution: throughout Malesia and the Pacific Islands; type from the Philippines.

Ecology: a rare terrestrial fern mostly found in lowland forests close to streams.



Plant (SITW05034)



Wing on stipe (SITW11167)



Sori (SITW11606)



Venation (SITW11167)

***Tectaria decurrens* (C.Presl) Copel.**

Etymology: *decurrens* = running down, decurrent; referring to the winged stipes.

Diagnostic characters: can be easily distinguished by the pinnatifid fronds with the stipe winged almost to the base.

Distribution: widely distributed from Asia, Malesia to the Pacific Islands; type from the Philippines.

Ecology: a common species of lowland to montane forests, usually found in damp gullies and along streams below 1,100 m.



Plants (SITW11130)



Rhizome (SITW11130)



Sori (SITW11130)



Venation (SITW11130)

***Tectaria devexa* (Kunze) Copel.**

Etymology: *devexa* = sloping; relating to its pinnae.

Diagnostic characters: a distinct species with very thin and soft pentagonal laminae.

Distribution: widely distributed from Asia, Malesia, Australia to the Pacific Islands; type from Java.

Ecology: a rare rupestral species always found on limestone in lowland forests.

Note: a variety *T. devexa* (Kunze) Copel. var. *novoguineensis* Holttum was described for small plants from Papua New Guinea. The Solomon Islands plants are usually small, and therefore may be that variety.



Plants (SITW00051)



Stipe scales (SITW05691)



Sori (SITW05691)



Pinna base (SITW05691)

***Tectaria durvillei* (Bory) Holttum**

Etymology: named after the French naval officer Jules Dumont d'Urville who collected the type.

Diagnostic characters: can be distinguished by its tripartite terminal pinnae, rather thick laminae, and glandular indusia (visible under a hand lens).

Distribution: West Papua (type locality), Papua New Guinea, and the Solomon Islands.

Ecology: a very common rupestral species growing on coral stones or dry slopes in lowland forests and disturbed habitats.



Plant (SITW10554)



Scales on stipe base (SITW10554)



Sori (SITW10554)



Venation (SITW10554)

***Tectaria ferruginea* (Mett.) Copel.**

Etymology: *ferruginea* = rusty-brown color; referring to its rhizome scales.

Diagnostic characters: resembles *Tectaria* sp. 3 in the degree of dissection and venation but *T. ferruginea* differs in having glabrous laminae and dentate lamina margins.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon terrestrial species growing in shaded, damp, forest valleys below 900 m.



Plant (SITW01082)



Scales on stipe (SITW10424)



Sori (SITW07622)



Venation (SITW10424)

***Tectaria melanoaula* (Blume) Copel.**

Etymology: *melano* = black; *caula* = stalk; referring to the black pinna stalks.

Diagnostic characters: large lanceolate or deltoid fronds (over 1 m long) with black, polished stipes; basal pinnae usually long stalked (3 cm).

Distribution: widely distributed in Malesia and the Solomon Islands; type from Java.

Ecology: a common species found in damp forests at altitudes of 0–800 m.

Note: this species was misidentified as *T. latifolia* (G.Forst.) Copel. in the past. *Tectaria latifolia* differs from *T. melanoaula* by having larger and more divided fronds (basal pinna contains 3–4 free pinnules, rather than 1–2 as in *T. melanoaula*) and mainly occurs in Polynesia (S.Y.Dong, pers. comm., 2016).



Plant (SITW07638)



Rhizome and stipe bases
(SITW05022)



Scales on stipe (SITW05022)



Sori (SITW00194)

***Tectaria menyanthidis* (C.Presl) Copel.**

Etymology: *menyanthidis* = *Menyanthes*-like; referring to the resemblance to the flowering plant *Menyanthes*.

Diagnostic characters: the only *Tectaria* in the Solomon Islands with a creeping rhizome and well-spaced fronds.

Distribution: Malesia, the Solomon Islands, and Fiji; type from the Philippines.

Ecology: a common species found in lowland forests below 300 m, usually along streams.



Plant (SITW11588)



Young frond (SITW11588)



New plant arising from bud (SITW11588)



Adaxial surface of lamina, backlight (SITW11588)

***Tectaria nayarii* Mazumdar**

Etymology: named after the Indian botanist Bala Krishnan Nayar.

Diagnostic characters: could be confused with *T. aurita* but differs in being a larger species with deltoid laminae and having less difference between the sterile and fertile fronds.

Distribution: India, Malesia, Mariana Islands, and the Solomon Islands; type from the Philippines.

Ecology: a rare terrestrial growing in lowland (below 500 m) primary forests on damp slopes.

Note: newly recorded for the Solomon Islands.



Plant (SITW05710)



Scales on stipe base (SITW11112)



Sorus distribution, backlight (SITW11112)



Venation (SITW11112)

***Tectaria repanda* (Willd.) Holttum**

Etymology: *repanda* = with a slightly wavy margin; referring to the pinnae.

Diagnostic characters: very similar to *T. crenata* but *T. repanda* is a smaller species (fronds usually less 1 m long) with narrower pinnae and the sterile and fertile fronds are more dimorphic.

Distribution: throughout Malesia and the Pacific Islands; type from the Philippines.

Ecology: a common species of lowland forests, usually found in humid gullies and hillsides below 300 m.



Plant (SITW11095)



Stipe base (SITW11095)



Sori (SITW11095)



Pinna bases (SITW11095)

***Tectaria tahitensis* Maxon**

Etymology: from Tahiti, where the type was collected.

Diagnostic characters: very similar to *T. melanocaula* but the indusia of this species are clearly fimbriate.

Distribution: Tahiti (type locality), Moorea, and the Solomon Islands.

Ecology: only recorded from Santa Cruz Islands near the coast, always found growing on coral stones.

Note: newly recorded for the Solomon Islands.



Plant (SITW05693)



Scales on stipe base (SITW05693)



Sori (SITW05693)



Abaxial surface of lamina (SITW05693)

***Tectaria* sp. 1**

Diagnostic characters: resembles *T. ferruginea* in frond texture and color, but this species differs in having larger fronds (over 1 m long) that are more deeply divided (3- to 4-pinnate). The strongly auriculate pinnule base also distinguishes this species from other *Tectaria* in the Solomon Islands.

Ecology: a rare rupestral species found in limestone gullies at ca. 500 m.



Plant (SITW05752)



Rhizome and emergent fronds
(SITW11142)



Sori (SITW11142)



Venation (SITW11142)

***Tectaria* sp. 2**

Diagnostic characters: could be confused with *T. melanocaula* or *T. tahitensis* which share the same degree of frond division, but this species differs from *T. melanocaula* in the stipe, rachis and costa being green rather than black; and from *T. tahitensis* by having an entire indusium.

Ecology: an uncommon species growing on damp rocky slopes or limestone in lowland primary forests (below 700 m).



Plant (SITW04945)



Scales on rhizome and stipe base (SITW04945)



Sori (SITW04945)



Venation (SITW04945)

***Tectaria* sp. 3**

Diagnostic characters: the 2-pinnate (3-pinnate at base) fronds covered with short hairs on both lamina surfaces distinguishes this species from other *Tectaria* species in the Solomon Islands.

Ecology: a rare species found in damp forests at altitudes of 600–1,000 m.



Habitat (SITW11129)

***Tectaria* sp. 4**

Diagnostic characters: a very distinct species with simple or 1-pinnate fronds and red sori when mature.

Ecology: a very rare rupestral species only found on a damp rocky wall of a cave at ca. 600 m.



Plants (SITW11129)



Rhizome and stipe bases (SITW11129)



Frond base (SITW11129)



Adaxial surface of lamina, backlight (SITW11129)



Sori (SITW11129)

OLEANDRACEAE

The type genus of the family *Oleandra* was published by the Spanish botanist Antonio José Cavanilles in 1799. The name of the genus was derived from the resemblance of the distinctive shrubby growth form of most Oleandraceae species to the flowering plant oleander (*Nerium*, Apocynaceae). Oleandraceae used to be included in a broadly circumscribed Davalliaceae, but nowadays it is widely accepted as a separate family, and this is also supported by the molecular evidence (Zhang & Zhang, 2015.).

One genus with ca. 15 species worldwide; 3 species in the Solomon Islands, 2 of which are listed here.

Terrestrially rooted but with scrambling aerial rhizomes or epiphytic; **rhizomes** thick and stiff, densely covered with peltate scales; **fronds** simple, narrowly elliptic, apex acute or acuminate, margins entire, veins free, close and parallel, usually forking at the midribs; **sori** on veins midway between midrib and margin in one or more rows, indusia kidney-shaped; **spores** monolete.

OLEANDRA CAV.

Etymology: referring to the resemblance to the flowering plant oleander.

Description: same as family.





Habitat (SITW10572)



Rhizome (SITW10572)



Cross section of rhizome (SITW10572)



Sori (SITW06949)

***Oleandra neriiformis* Cav.**

Etymology: *nerii* = oleander-like; *formis* = resembling, shape; referring to the resemblance to the flowering plant oleander.

Diagnostic characters: can be distinguished from the other species by having fronds usually in radiating whorls on an aerial rhizome. Furthermore, the fertile and sterile fronds are the same in shape and size.

Distribution: widely distributed from Asia, Malesia, Australia, to the Pacific Islands; type from the Philippines.

Ecology: an uncommon species found in lowland to montane forests, usually on well lit ridges at altitudes of 250–1,200 m.



Plants (SITW06936)

***Oleandra weneri* Rosenst.**

Etymology: named after the German botanist Eugen Werner, who collected the type.

Diagnostic characters: distinguished by its frond dimorphism, with narrower fertile fronds, and by the long acuminate apex of the sterile fronds.

Distribution: Moluccas, West Papua, Papua New Guinea (type locality), the Solomon Islands, and Vanuatu.

Ecology: a very common species found on ridges of montane forests at altitudes of 500–1,600 m.



Rhizome (SITW11645)



Sori (SITW05251)



Sterile pinna (SITW11645)



Fronnd dimorphism (SITW03074)

DAVALLIACEAE

Davalliaceae is a small family of epiphytic ferns restricted to the Old World, with most species in the damp tropical forests of Asia, Malesia, and the Pacific Islands. The generic classification of the family is a long-standing challenge that has yet to be settled (Tsutsumi & al., 2008; Liu & Schneider, 2013). Here we accept only a single genus, *Davallia*, for the family as proposed by Tsutsumi & al. (2016).

One genus with ca. 65 species worldwide; 12 species in the Solomon Islands, 11 of which are listed here.

Plants epiphytic or sometimes rupestral; **rhizomes** long creeping, scales peltate with long acuminate apices; **fronds** simple to 3-pinnate, more or less dimorphic with fertile fronds being more divided and having narrower segments, lamina glabrous, usually leathery, veins free; **sori** on vein ends close to the margin, indusia pocket shaped, attached at sides and base, opening to the margin; **spores** yellow, reniform, monolete.

DAVALLIA SM.

Etymology: named after the Swiss botanist Edmund Davall.
Description: same as family.





Plant (SITW04072)



Cross section of rhizome (SITW10475)



Sori (SITW10475)



Venation (SITW10475)

***Davallia denticulata* (Burm.f.) Mett. ex Kuhn var. *elata* (G.Forst.) Mett. ex Kuhn**

Etymology: *denticulata* = finely toothed; *elata* = raised; referring to its toothed pinnule margins, and elongated indusia, respectively.

Diagnostic characters: similar to *D. solida* in size and degree of division of the laminae but the pinnules of this species are more deeply incised, especially when fertile.

Distribution: throughout Malesia and the Pacific Islands (type locality).

Ecology: a common epiphyte in forests and forest margins, often in a light gap in the forest canopy, 0–1,200 m.

Note: differs from the typical variety by the indusium margin being elongated and free from the frond margin. This species was sometimes identified as *D. epiphylla* (G.Forst.) Sw. but here we follow the synonymization of Nootboom (1994).



Plants (SITW06863)



Sori (SITW11031)



Rhizome (SITW11031)



Venation (SITW11031)

***Davallia heterophylla* J.Sm.**

Etymology: *hetero* = differing; *phylla* = leaf; referring to the dimorphism of its sterile and fertile fronds.

Diagnostic characters: the dimorphic fronds are very distinctive, with the sterile fronds simple and the fertile fronds pinnatifid.

Distribution: throughout Malesia and the Pacific Islands; type from Sumatra.

Ecology: a common low-altitude epiphyte found in forest margins and plantations.



Habitat (SITW07564)



Scales on stipe (SITW07564)



Sori (SITW07564)



Sterile frond (SITW07564)

Davallia kinabaluensis* (Copel.) C.W.Chen, *comb. nov.

Basionym: *Humata kinabaluensis* Copel. Philipp. J. Sci., C 12: 48. 1917.

Etymology: *kinabaluensis* = from Mt. Kinabalu, Borneo, where the type was collected.

Diagnostic characters: similar to *D. serrata* but differs in having less divided sterile fronds (2-pinnate) and oblate indusia.

Distribution: Sabah (type locality), Indonesia, and the Solomon Islands.

Ecology: usually found along ridges in mossy forests above 1,500 m; locally common.

Note: newly recorded for the Solomon Islands. This is a member of the *D. repens* complex according to Nootboom (1994). Chen & al. (2014) showed that the *D. repens* complex has a very complicated evolutionary history including multiple polyploidization and hybridization events. In the Solomon Islands, 4 taxa can be distinguished by morphology. Further study is needed to clarify their relationship.



Plant (SITW03458)



Sori (SITW03458)



Rhizome (SITW03081)



Scales on rachis (SITW03458)

***Davallia pectinata* Sm.**

Etymology: *pectinata* = comb-like; referring to its parallel pinnae.

Diagnostic characters: like *D. sessilifolia* in having a deeply pinnatifid frond with pinnae that arise near perpendicular from the rachis, but the pinnae have entire margins.

Distribution: Asia, Malesia, and the Pacific Islands; type from India.

Ecology: a common low altitude (below 1,000 m) epiphyte found in open forests and plantations.



Plants (SITWo3387)



Rhizome (SITWo2977)



Sori (SITWo2977)



Adaxial surface of lamina (SITWo3387)

***Davallia pentaphylla* Blume**

Etymology: *penta* = five; *phylla* = leaf; referring to the shape of its fronds.

Diagnostic characters: fronds pinnate (bipinnate at base) with a conformal terminal pinna, and pentagonal in outline.

Distribution: through Malesia and the Pacific Islands; type from Java.

Ecology: epiphytic or rupestral in mid-altitude forests (500–1,300 m); uncommon.

Note: plants of the Solomon Islands have been regarded as *Scyphularia appressa* Copel. on account of their appressed rhizome scales and truncate indusia. However, we believe that the Solomon Islands plants fall within the variation of a broadly defined *D. pentaphylla*.



Plant (SITWo2985)



Rhizome (SITWo2985)



Sori (SITWo2985)



Adaxial surface of lamina (SITWo2985)

***Davallia pubescens* C.W.Chen, nom. nov.**

Basionym: *Leucostegia hirsuta* J.Sm., J. Bot. 3: 416. 1841.

Blocking name: *Davallia hirsuta* Sw. (\equiv *Dennstaedtia hirsuta* (Sw.) Mett. ex Miq.)

Etymology: *pubescens* = downy-hairy; referring to the hairy fronds.

Diagnostic characters: can be easily distinguished from other species of Davalliaceae in the Solomon Islands by its oblong-lanceolate and hairy fronds.

Distribution: throughout Malesia and the Solomon Islands; type from the Philippines.

Ecology: a rare epiphyte in damp forests near streams below 700 m.



Plants (SITW00714)



Rhizome (SITW11033)



Fertile frond (SITW11033)



Sterile frond (SITW11033)

***Davallia pusilla* Mett.**

Etymology: *pusilla* = very small; referring to its size.

Diagnostic characters: the smallest species of the family in the Solomon Islands and can be distinguished by its finely divided fertile fronds.

Distribution: Indonesia, Papua New Guinea, and the Pacific Islands; type from New Caledonia.

Ecology: a common low- to mid-altitude (below 1,200 m) epiphyte found in mountain forests.

Note: this is a member of the *D. repens* complex according to Nootboom (1994), see also the note under *D. kinabaluensis*.



Plant (SITW04925)



Scales on stipe (SITW05368)



Sori (SITW05368)



Adaxial surface of sterile frond (SITW04925)

***Davallia serrata* Willd.**

Etymology: *serrata* = edged with forward pointing teeth; referring to the pinnule margin.

Diagnostic characters: could be confused with *D. kinabaluensis* but differs in having more divided sterile fronds (3-pinnate) and shell-shaped indusia.

Distribution: the Mariana Islands (type locality) and the Solomon Islands.

Ecology: epiphytic on tree trunks in mossy forests at altitudes of 700–1,200 m.

Note: this is a member of the *D. repens* complex according to Nootboom (1994), see also the note under *D. kinabaluensis*.



Plants (SITW11601)



Rhizome (SITW11601)



Fronnd apex (SITW11601)



Adaxial surface of lamina (SITW11601)

***Davallia sessilifolia* Blume**

Etymology: *sessili* = attached without a distinct stalk; *folia* = leaf; referring to its sessile pinnae.

Diagnostic characters: like *D. pectinata* in having a deeply pinnatifid frond with pinnae that arise near perpendicular from the rachis, but the pinnae have toothed margins.

Distribution: throughout Malesia and the Pacific Islands; type from Java.

Ecology: a common epiphyte found in mountain forests at altitudes of 500–1,300 m.



Plants (SITW10500)



Rhizome (SITW10500)



Rhizome scales (SITW10500)



Sori (SITW00300)

***Davallia solida* (G.Forst.) Sw.**

Etymology: *solida* = solid, firm; referring to the thick texture of its fronds.

Diagnostic characters: could be confused with *D. denticulata* var. *elata* but distinguished by its less incised pinnules and much thicker texture.

Distribution: widely distributed from Asia, Malesia, to the Pacific Islands (type locality).

Ecology: a very common epiphyte found in forests, forest margins, coconut plantations, gardens, and coastal trees below 1,000 m.



Plants (SITW10594)



Fertile frond (SITW10594)



Sori (SITW10594)



Sterile frond (SITW10594)

***Davallia* sp.**

Diagnostic characters: closest to *D. pusilla* but differs in being larger (fronds can reach 10 cm long) and the fertile and sterile fronds being strongly dimorphic.

Ecology: a rare epiphyte only recorded from Vanikoro on tree trunks and fallen logs at ca. 500 m.

Note: this is a member of the *D. repens* complex according to Nootboom (1994), see also the note under *D. kinabaluensis*.

POLYPODIACEAE

Polypodiaceae is the most species-rich fern family and exhibits the greatest ecological and morphological diversity among the extant fern lineages. Most members of the family are tropical forest epiphytes and several morphological innovations have evolved including humus-collecting fronds, symbioses with ants, CAM photosynthesis and desiccation tolerance. The previously recognized Grammitidaceae is now included in Polypodiaceae based on molecular evidence (Schneider & al., 2004b, Sundue & al., 2014).

Sixty-five genera with ca 1,652 species worldwide; 20 genera and ca. 70 species in the Solomon Islands, 51 of which are listed here.

Epiphytic or rupestral, less often terrestrial; **rhizomes** mostly shortly to long creeping, rarely erect, bearing scales; **fronds** monomorphic or dimorphic, mostly simple to pinnatifid or 1-pinnate, uncommonly more divided, veins often reticulate, with or without included veinlets, less often free; **sori** orbicular, elliptic, elongate, or acrostichoid, exindusiate; **spores** reniform and monolete or globose and trilete (most grammitids).

Key to genera

- 1a. Fronds with stellate hairs, especially on the abaxial surface..... *Pyrrosia*
- b. Fronds without stellate hairs..... 2
- 2a. Fronds with a thickened cartilaginous margin..... *Selliguea*
- b. Fronds without a thickened cartilaginous margin..... 3
- 3a. Rhizomes thick and hollow with ants living inside..... *Lecanopteris*
- b. Rhizomes solid..... 4
- 4a. Fronds simple..... 5
- b. Fronds more divided..... 12
- 5a. Sori confined to a narrow apical part..... 6
- b. Sori not confined to a narrow apical part..... 7
- 6a. Rhizomes short creeping, not filiform..... *Lepisorus*
- b. Rhizomes long creeping, filiform..... *Lemmaphyllum*
- 7a. Sori elongate and linear..... 8
- b. Sori rounded or elliptical..... 10
- 8a. Minute plants, less than 10 cm tall..... *Scleroglossum*
- b. Plants much larger, fronds usually over 20 cm long..... 9
- 9a. Laminae thin, veins conspicuous..... *Leptochilus*
- b. Laminae thick, veins inconspicuous..... *Loxogramme*
- 10a. Medium size plants, rhizomes short to long creeping..... *Microsorium* (partly)
- b. Minute plants, fronds usually less than 10 cm long, rhizomes very short..... 11
- 11a. Fronds arranged in two rows on the rhizome..... *Oreogrammitis*
- b. Fronds arranged radially on the rhizome..... *Radiogrammitis*

- 12a. Fronds 2-pinnate..... *Themelium*
- b. Fronds pinnatifid or pinnate..... 13
- 13a. Fronds pinnate..... *Goniophlebium*
- b. Fronds pinnatifid..... 14
- 14a. Sori protected by folded lamina lobes..... 15
- b. Sori not protected by folded lamina lobes..... 16
- 15a. Fronds texture thick..... *Acrosorus*
- b. Fronds texture thin..... *Calymmodon*
- 16a. Sori immersed in marginal cavities..... *Prosaptia*
- b. Sori on the lamina abaxial surface..... 17
- 17a. Large plants, with specialized humus-collecting fronds or widened frond bases..... *Aglaomorpha*
- b. Large to small plants, without such specialized fronds or frond bases..... 18
- 18a. Fronds densely covered by glandular hairs..... *Chrysogrammitis*
- b. Fronds glabrous or with sparse non-glandular hairs..... 19
- 19a. Rhizomes erect, fronds radially attached..... *Tomophyllum*
- b. Rhizomes short or long creeping..... 20
- 20a. Rhizomes short creeping, fronds dorsiventrally attached..... *Ctenopterella*
- b. Rhizomes long creeping, fronds well-spaced..... *Microsorium* (partly)

ACROSORUS COPEL.

Etymology: *acro* = summit, highest; *sorus* = sori; referring to the sori being distributed at the tip of the pinnae.

Description: epiphytes; rhizomes short, suberect, scales linear, entire; fronds linear, deeply lobed almost to midrib, lobes subtriangular, leathery, glabrous or nearly so, veins hardly visible; sori deeply sunken in pouches or protected by folded lamina segments.



AGLAOMORPHA SCHOTT

Etymology: *aglaios* = splendid; *morphe* = shape; referring to the author's impression of the plants.

Description: epiphytes; rhizomes long creeping, scales peltate, non-clathrate; fronds monomorphic or dimorphic, sometimes with humus collecting fronds, veins reticulate, with included free veins; sori round, exindusiate.



CALYMMODON C. PRESL

Etymology: *kalymma* = cover, *odus* = tooth; referring to the sporangia being enclosed in the folded pinna segments.

Description: epiphytes; rhizomes short, suberect, scales brown, not clathrate; fronds linear, pinnatifid, lobed almost to midrib, veins free and simple; sori solitary, naked but protected by folded fertile lobes of pinnae.



CHRYSOGRAMMITIS PARRIS

Etymology: *chryso* = gold; *grammitis* = the fern genus *Grammitis*; referring to the color of the glands on the laminae and the resemblance to *Grammitis* in the broad sense.

Description: epiphytes; rhizomes dorsiventral, with stipes in 2 rows, scales not clathrate; fronds deeply pinnately divided to narrow wing along rachises, with simple or branched glandular hairs, veins free; sori superficial, 1 or more per pinna.

CTENOPTERELLA PARRIS

Etymology: *Ctenopteris* = a genus of ferns; *ella* = diminutive suffix; referring to the small size of the genus compared to *Ctenopteris*.

Description: epiphytes; rhizomes dorsiventral, stipes in two rows, scales pale to medium brown, not clathrate; lamina pinnate or 2-pinnatifid; veins free; sori usually in two rows on pinnae.

GONIOPHLEBIUM (BLUME) C.PRESL

Etymology: *gonio* = angled; *phlebos* = veins; referring to the venation.

Description: epiphytes; rhizomes long creeping, scales clathrate; fronds pinnate with most pinnae free, pinna margins serrate, veins reticulate, with included free veins; sori in one row on each side of the pinna midrib, round, exindusiate.

LECANOPTERIS REINW.

Etymology: *lecano* = dish; *pteris* = fern; referring to the dish-shaped scales on the rhizomes.

Description: epiphytes; rhizomes creeping, fleshy, and hollow, with ants living inside; fronds simple to deeply pinnatifid, veins reticulate with included free veins; sori in a row on each side of the midveins, round, exindusiate.

LEMMAPHYLLUM C.PRESL

Etymology: *lemma* = scale; *phyllon* = leaf; referring to the scales present on the laminae.

Description: epiphytes; rhizomes long creeping, scales clathrate; fronds simple, dimorphic, the fertile fronds longer and narrowed in the fertile part, veins reticulate but obscure; sori round, on the distal half of the fronds, exindusiate.

LEPISORUS (J.SM.) CHING

Etymology: *lepis* = scale; *soros* = sori; referring to the sori being covered by scale-like paraphyses.

Description: epiphytes; rhizomes short creeping, scales clathrate, margins toothed; fronds with a short stipe, simple, narrow, margins entire, veins reticulate; sori round in one row on each side of the midribs or on the narrowed terminal portion of the fertile fronds, with sporangia covering the entire surface.



LEPTOCHILUS KAULF.

Etymology: *leptos* = slender; *cheilos* = lip; referring to the slender lamina tip of some species.

Description: rupestral, epiphytic or terrestrial; rhizomes long creeping, scales clathrate or subclathrate; fronds remote, monomorphic or dimorphic, simple or pinnatifid, usually thin, veins reticulate and prominent; sori round, elongate, or linear, sometimes acrostichoid.



LOXOGRAMME (BLUME) C.PRESL

Etymology: *loxos* = oblique; *gramme* = line; referring to the shape and arrangement of sori.

Description: epiphytes; rhizomes short creeping, scales more or less clathrate; fronds simple, thickly papery, veins reticulate, without included free veins; sori elongate, in oblique rows each side of midveins, exindusiate.



MICROSORUM LINK

Etymology: *mikros* = small; *soros* = sori; referring to the small sori of some species.

Description: epiphytic or sometimes terrestrial or rupestral; rhizomes short to long creeping, scales peltate, clathrate or partly clathrate, margins thin; fronds simple or pinnatifid, margins entire, veins reticulate, usually thick; sori round, sometimes sunken into the laminae.



OREOGRAMMITIS COPEL.

Etymology: *oreo* = mountain; *grammitis* = the fern genus *Grammitis*; referring to the habitat of the type species and the resemblance to *Grammitis*.

Description: epiphytes; rhizomes dorsiventral, stipes in two rows, sometimes articulated; fronds usually simple, rarely pinnatifid or pinnate, with simple hairs, veins usually free, or rarely with occasional anastomoses; sori usually in two rows, one on each side of the midveins.



PROSAPTIA C.PRESL

Etymology: *prosaptien* = to insert or immerse; referring to the sori of some species being sunken in the lamina margins.

Description: epiphytes; rhizomes short creeping, scales narrowly ovate, clathrate, with acicular red brown hairs on both margins and scale surfaces; fronds pinnatifid to pinnate, veins pinnate in the lobes; sori near the lobe margins, sunken in pits.



PYRROSIA MIRB.

Etymology: *pyr* = fire; referring to the brownish-orange colored indumentum of the type species.

Description: epiphytes; rhizomes long creeping, scales peltate, with thin margins; fronds simple, monomorphic or dimorphic, laminae texture thick, veins obscure, covered with small stellate hairs (visible with hand lens) on both surfaces; sori small, round, exindusiate.



RADIOGRAMMITIS PARRIS

Etymology: *radiosa* = having many rays; *grammitis* = the fern genus *Grammitis*; referring to the radial spread of the fronds from the rhizome, and the resemblance to *Grammitis*.

Description: epiphytes; rhizomes radial, stipes in whorls, not articulated; fronds usually simple, veins free, usually branched, usually with simple hairs, whitish or pale to dark brown; sori usually in two rows, on each side of the midveins.

*SCLEROGLOSSUM* ALDERW.

Etymology: *skleros* = hard; *glossa* = tongue; referring to the strap-shaped and leathery fronds.

Description: epiphytes; rhizomes radial, scales narrowly ovate, non-clathrate, margins entire; fronds simple, linear, without an obvious stipe, thick in texture; sori elongate, one on each side of the midveins, in the distal part of the fronds but not reaching the apex.

*SELLIGUEA* BORY

Etymology: named after the French instrument maker A. F. Gilles, who was also called Selligie.

Description: epiphyteic, or occasionally terrestrial; rhizomes long creeping, scales non-clathrate; fronds simple to pinnate, monomorphic to variably dimorphic with fertile fronds narrower than sterile fronds, margins thickened and cartilaginous, veins reticulate with included free veins; sori in rows, round, exindusiate.

*THEMELIUM* (T. MOORE) PARRIS

Etymology: *themelios* = belonging to the foundation; referring to the sorus position at the base of pinnules of some species of this genus.

Description: epiphytes; rhizomes dorsiventral, scales clathrate or not; fronds pinnately divided to 2-pinnatifid, veins pinnately branched, free; sori more than 1 per pinna, orbicular to oval, superficial or slightly sunken.

*TOMOPHYLLUM* (E. FOURN.) PARRIS

Etymology: *tomos* = slice; *phyllon* = leaf; referring to the frond division of the type species.

Description: epiphytes; rhizomes radial, stipes in whorls, scales pale to medium brown, not clathrate; fronds deeply pinnately lobed to 3-pinnatifid, veins free, pinnately branched; sori usually in two rows on pinnae, superficial, rounded to elliptic.





Plant (SITWo4938)



Rhizome (SITWo4938)



Sori (SITWo4938)



Adaxial surface of lamina (SITWo4938)

***Acrosorus reineckei* (Christ) Copel.**

Etymology: named after the German botanist Karl Lorenz Reinecke who collected the type.

Diagnostic characters: similar to *Calymmodon* in having the sori protected in the folded lamina segments, but differs in its very thick frond texture and larger plant size.

Distribution: the Solomon Islands and Samoa (type locality).

Ecology: a rare epiphyte found in mossy forests at altitudes of 900–1,300 m.

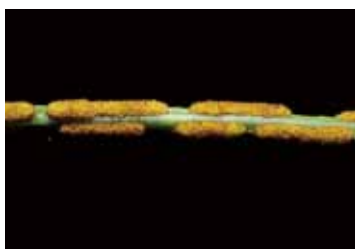
Note: newly recorded for the Solomon Islands.



Habitat (SITW05376)



Plant (SITW03590)



Sori (SITW03358)



Venation (SITW10488)

***Aglaomorpha drynarioides* (Hook.) M.C.Roos**

Etymology: *Drynaria* = a genus of fern; *oides* = like, similar; referring to the resemblance of the sterile fronds to some species of *Drynaria*.

Diagnostic characters: sharing the venation pattern and rhizome scale color of *A. heraclea*, but *A. drynarioides* can be distinguished by the strongly dimorphic fertile pinnae.

Distribution: Malesia and the Solomon Islands; type from Singapore.

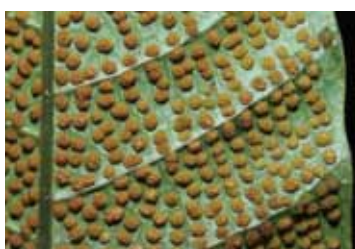
Ecology: a common epiphyte of lowland coastal forests and plantations below 500 m, occasionally extending to 950 m.



Habitat (SITW06903)



Plant (SITW06903)



Sorus distribution (SITW06903)



Sori (SITW06903)

***Aglaomorpha heraclea* (Kunze) Copel.**

Etymology: *heraclea* = Heracles, the Greek divine hero; referring to the large plant size.

Diagnostic characters: similar to *A. drynarioides* when sterile but *A. heraclea* has the sori scattered on the abaxial side of pinnae which are of normal width and not markedly narrowed.

Distribution: widely distributed in Malesia and the Solomon Islands; type from Java.

Ecology: a common epiphyte of montane forests, ridges and gullies at altitudes of 700–1,000 m.



Habitat (SITW11173)



Stipe (SITW06876)



Sori (SITW11173)



Adaxial surface of sterile pinna (SITW11173)

***Aglaomorpha parkinsonii* (Baker) Parris & M.C.Roos**

Etymology: named after the Danish explorer and anthropologist Richard Heinrich Robert Parkinson.

Diagnostic characters: very different from the other congeneric species of the Solomon Islands in being much smaller and with soft, hairy fronds.

Distribution: Moluccas, New Guinea, and the Solomon Islands; type from Papua New Guinea.

Ecology: an uncommon epiphyte of lowland to submontane forests at altitudes of 100–1,000 m, often seen on trunk branches in the forest canopy.



Plants (SITW05700)



Sori (SITW11153)



Rhizome (SITW11118)



Humus collecting frond (SITW11153)

***Aglaomorpha rigidula* (Sw.) Hovenkamp & S.Linds.**

Etymology: *rigidula* = quite stiff; referring to the frond texture.

Diagnostic characters: both the humus collecting fronds and pinnae of the normal fronds are much narrower than *A. sparsisora*.

Distribution: widely distributed from Asia, Malesia, Australia to the Pacific Islands; type from Java.

Ecology: an uncommon epiphyte found in lowland to submontane forests or plantations below 1,200 m.

Note: this species used to be placed in *Drynaria*, but molecular evidence (Schneider & al., 2008) showed that *Aglaomorpha* is nested within *Drynaria*. *Aglaomorpha* is the older name and therefore has priority over *Drynaria*. Although Christenhusz & Schneider (2012) proposed conserving the name *Drynaria* against *Aglaomorpha*, the issue is still unresolved, and here we follow PPG I (2016) including *Drynaria* in *Aglaomorpha*.



Plants (SITW00103)

***Aglaomorpha sparsisora* (Desv.) Hovenkamp & S.Linds.**

Etymology: *sparsi* = scattered; *sora* = sori; referring to the sorus distribution.

Diagnostic characters: sharing the character of humus collecting fronds with *A. rigidula* but *A. sparsisora* can be distinguished by having much broader pinnae, and pinnatifid rather than pinnate fronds.

Distribution: widely distributed from Asia, Malesia, Australia to the Pacific Islands; type not traced.

Ecology: a very common epiphyte mainly in lowland forests, plantations, and even on big trees in cities.

Note: see also the note under *A. rigidula*.



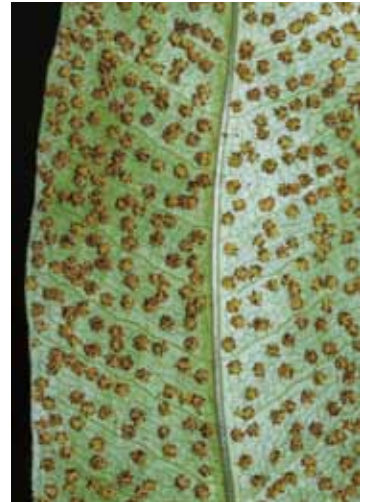
Rhizome scales (SITW00103)



Humus collecting frond (SITW00103)



Cross section of rhizome (SITW00103)



Sori (SITW00103)



Venation (SITW00103)



Plants (SITWo4939)

***Calymmodon* sp. 1**

Diagnostic characters: differs from sp. 2 by having rather dense hairs on the laminae, and the lowest fertile pinnae and the uppermost sterile pinnae being more or less the same length.

Ecology: a common epiphyte found in high montane mossy forests at altitudes of 800–1,300 m.

Note: this species was usually misidentified as *C. cucullatus* (Nees & Blume) C.Presl.



Fronds (SITWo7605)



Abaxial surface of fertile pinnae (SITWo7603)



Adaxial surface of sterile pinnae (SITWo7603)



Abaxial surface of sterile pinnae (SITWo7603)



Plant (SITW01054)



Frond (SITW06928)



Sori (SITW05673)

Abaxial surface of sterile pinnae
(SITW05673)

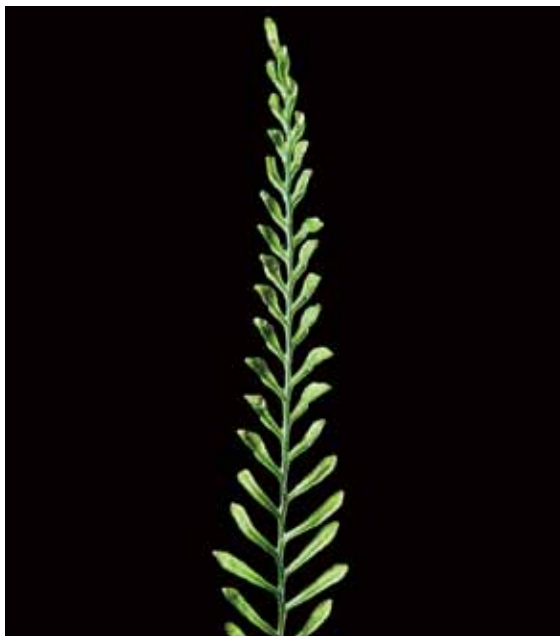
***Calymmodon* sp. 2**

Diagnostic characters: differs from sp. 1 by having rather glabrous laminae and the lowest fertile pinnae being much shorter than the uppermost sterile pinnae.

Ecology: an uncommon epiphyte found in high montane mossy forests at altitudes of 1,000–1,700 m.



Plant (SITW11681)



Adaxial surface of lamina (SITW11681)



Sori (SITW11681)

Sterile pinnae
(SITW11681)

***Calymmodon* sp. 3**

Diagnostic characters: can be easily distinguished from other *Calymmodon* in the Solomon Islands by its very narrow and glabrous pinnae.

Ecology: a very rare epiphyte growing in mossy forests at ca. 1,000 m.



Plants (SITW04943)



Sori (SITW11678)

Adaxial surface of lamina
(SITW11678)Adaxial surface of lamina,
backlight (SITW11678)

***Chrysogrammitis musgraviana* (Baker) Parris**

Etymology: from Mt. Musgrave in Papua New Guinea, where the type was collected.

Diagnostic characters: a small species with fronds ca. 10 cm long, fronds pinnatifid, densely covered with glandular hairs.

Distribution: Malesia, the Solomon Islands, and Vanuatu; type from Papua New Guinea.

Ecology: a rare epiphyte of high montane mossy forests on ridges at altitudes of 1,200–1,600 m.



Habitat (SITW10510)



Frond bases (SITW10510)



Sori (SITW10510)



Adaxial surface of pinnae, backlight (SITW10510)

***Ctenopterella blechnoides* (Grev.) Parris**

Etymology: *blechnoides* = similar to *Blechnum*, a fern genus; referring to the frond division.

Diagnostic characters: very similar to *Ctenopterella* sp. but can be distinguished by being smaller, having shorter stipes (ca. 2 cm) and with hydathodes at the vein endings on the adaxial surface of its lamina.

Distribution: widely distributed from Asia, Malesia, Australia, and the Pacific Islands; type from the Society Islands.

Ecology: an uncommon epiphyte usually found in montane forests of low altitude below 500 m.



Plant (SITW02947)



Frond bases (SITW10590)



Sori (SITW10590)



Adaxial surface of pinnae, backlight (SITW10590)

***Ctenopterella* sp.**

Diagnostic characters: could be confused with *C. blechnoides* but differs in being larger, having longer stipes (ca. 5 cm) and lacking hydathodes at the vein endings on the adaxial surface of its lamina.

Ecology: a higher altitude species than *C. blechnoides*, being an uncommon epiphyte in mossy forests at altitudes of 500–1,400 m.

Note: this species was sometimes misidentified as *C. seemannii* (J.Sm.) Parris, a species with much more strongly dimorphic fertile pinnae.



Plants (SITW04914)



Sori (SITW04914)



Rhizome (SITW04914)

Adaxial surface of pinnae
(SITW04914)

***Goniophlebium demersum* (Brause) Rodl-Linder**

Etymology: *demersum* = submerged; referring to the sori being sunken into the laminae.

Diagnostic characters: can be confused with *G. serratifolium* but the venation differs with only a single row of areoles on each side of the midvein.

Distribution: Sulawesi, Moluccas, New Guinea (type locality), and the Solomon Islands.

Ecology: a common epiphyte of high montane forests on ridges at altitudes of 850–1,500 m.



Plant (SITW11656)

***Goniophlebium persicifolium* (Desv.) Bedd.**

Etymology: *persica* = peach; *folium* = leaf; referring to the similarity of the pinnae to leaves of the peach tree.

Diagnostic characters: can be distinguished from the congeneric species by the long-stalked pinnae.

Distribution: widely distributed from Himalayas to the Pacific Islands; type from Java.

Ecology: a common epiphyte of submontane to montane forests, usually growing on ridges, but also in gullies, at altitudes of 500–1,500 m.



Rhizome and stipe base (SITW11656)



Rhizome scales (SITW11656)



Adaxial surface of pinnae (SITW11656)



Sori (SITW11656)



Adaxial surface of pinna, backlight (SITW11656)



Plant (SITW11150)



Rhizome and stipe base (SITW11150)

***Goniophlebium serratifolium* Brack.**

Etymology: *serrate* = deeply cut; *folium* = leaf; referring to the serrate pinnae.

Diagnostic characters: similar to *G. subauriculatum* but *G. serratifolium* can be distinguished by its cuneate pinna bases (rather than truncate or auriculate).

Distribution: New Guinea, the Solomon Islands, Fiji (type locality), and Samoa.

Ecology: an uncommon epiphyte usually found in lowland or montane forests near ridges at altitudes of 500–900 m.



Cross section of rhizome (SITW11150)



Pinna bases (SITW11150)



Sori (SITW11150)



Adaxial surface of pinna, backlight (SITW11150)



Plant (SITW11152)

***Goniophlebium subauriculatum* (Blume) C.Presl**

Etymology: *sub* = approaching, nearly; *auriculatum* = auriculate; referring to its slightly auriculate pinna bases.

Diagnostic characters: most similar to *G. serratifolium* but *G. subauriculatum* differs in having truncate or auriculate pinna bases, and acicular scales present to varying degrees on its rachises and laminae.

Distribution: widely distributed in Indochina, Malesia, Australia, New Caledonia, and the Solomon Islands; type from Java.

Ecology: a rare species growing on ridges of montane forests at ca. 900 m.



Rhizome (SITW11152)



Scales on stipe (SITW11152)



Pinna bases (SITW11152)



Sori (SITW11152)



Venation (SITW11152)



Plants (SITW00342)

Cross section of rhizome
(SITW11013)

Sori (SITW11013)

Adaxial surface of lamina
(SITW11013)

***Lecanopteris sinuosa* (Hook.) Copel.**

Etymology: *sinuosa* = with a wavy margin; referring to its fronds.

Diagnostic characters: can be recognized by its thick but hollow rhizomes, usually with ants living inside.

Distribution: widely distributed in Indochina, Malesia, the Solomon Islands, and Vanuatu; type from Malaysia.

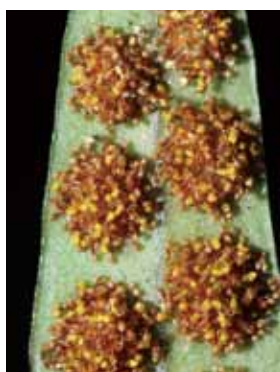
Ecology: a common epiphyte of rather dry habitats in the lowlands below 600 m.



Habitat (SITW11186)



Rhizome (SITW11186)



Sori (SITW06812)



Fronnd apex (SITW11186)

***Lemmaphyllum accedens* (Blume) Donk**

Etymology: *accedens* = approaching, agreeing with; relationship to the species is unclear.

Diagnostic characters: can be recognized in the field by its narrow, long creeping rhizome and well-spaced, small lanceolate fronds with sori only confined to the apex.

Distribution: Malesia and the Pacific Islands; type from Java.

Ecology: an uncommon epiphyte usually found on trees close to or overhanging rivers in lowland primary forests below 600 m.



Plants (SITW10595)



Sori (SITW07588)



Rhizome and stipe bases (SITW10595)

Adaxial surface of lamina,
backlight (SITW10595)

***Lepisorus mucronatus* (Fée) Li Wang**

Etymology: *mucronatus* = pointed; referring to the fertile part on the frond apex.

Diagnostic characters: can be recognized by the specialized, very narrow, fertile part on the frond apices.

Distribution: widely distributed from Sri Lanka, Indochina, Malesia, Australia, and the Pacific Islands; type from Luzon.

Ecology: a common epiphyte of lowland to montane forests below 1,700 m.

Note: previously called *Belvisia mucronata* (Fée) Copel., but here we follow Wang & al. (2010) in synonymising *Belvisia* with *Lepisorus*.



Plants (SITW10483)



Rhizome (SITW10483)



Sori (SITW07633)



Venation (SITW10483)

***Leptochilus macrophyllus* (Blume) Noot.**

Etymology: *macro* = large; *phyllus* = leaf; referring to the large fronds.

Diagnostic characters: the only species of the genus in the Solomon Islands, with simple fronds, fleshy texture, linear sori, and obvious reticulate venation.

Distribution: Asia, Indochina, Malesia, and the Solomon Islands; type from Java.

Ecology: an uncommon species of lowland forest gullies, usually growing on boulders in stream beds, but occasionally on tree bases, below 500 m.



Plant (SITW11159)

Rhizome and stipe bases
(SITW07676)

Frond base (SITW11159)



Abaxial surface of lamina (SITW07676)

***Loxogramme parksii* Copel.**

Etymology: named after the American botanist Harold Ernest Parks who collected the type.

Diagnostic characters: a smaller plant than *L. scolopendrioides* and the frond midribs are only slightly raised on both surfaces.

Distribution: the Solomon Islands, Vanuatu, Fiji (type locality), and Samoa.

Ecology: a common epiphyte in damp, lowland forests.



Plant (SITW10431)



Scales on rhizome (SITW10431)



Abaxial surface of lamina base (SITW03951)



Sori (SITW03951)

***Loxogramme scolopendrioides* (Gaudich.) C.V.Morton**

Etymology: *Scolopendrium* = a genus in Aspleniaceae, no longer recognised; *oides* = similar; referring to the fronds and sori are similar to those of *Scolopendrium*.

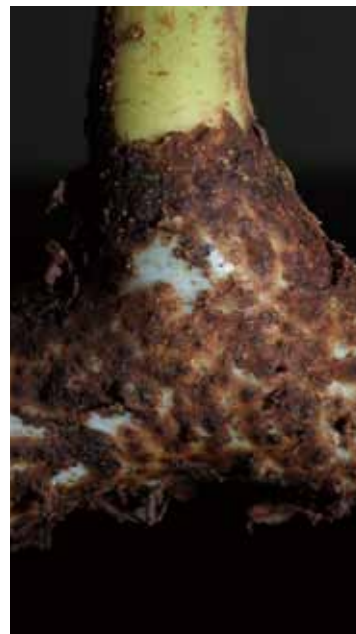
Diagnostic characters: a larger plant than *L. parksii* and the rachis forms a prominent ridge on the abaxial surface.

Distribution: Indochina, Malesia, and the Solomon Islands, type from Moluccas.

Ecology: an uncommon epiphyte found in damp forests, usually growing on big trees in valleys, below 900 m.



Plant (SITW05418)



Rhizome and stipe base (SITW05418)



Sorus distribution (SITW05418)



Venation (SITW03391)

***Microsorium biseriatum* (Bosman) Noot.**

Etymology: *bi* = two; *seriatum* = with longitudinal rows; referring to the arrangement of the sori.

Diagnostic characters: can be confused with *M. commutatum* but differs in having smaller sori (ca. 1 mm diameter, not 2–3 mm) and there are usually 2 rows of sori between the main lateral veins.

Distribution: Papua New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon species of montane forests, usually near streams at altitudes of 500–900 m.



Habitat (SITW05343)



Rhizome (SITW11117)



Sori (SITW11117)



Venation (SITW11117)

***Microsorium commutatum* (Blume) Copel.**

Etymology: *commutatum* = changed entirely; referring to the difference from *Polypodium aureum* L. (= *Phlebodium aureum* (L.) J.Sm.).

Diagnostic characters: similar to *M. biseriatum* but with larger sori (ca. 2–3 mm diameter, not 1 mm) that are more irregularly arranged. Also, the lamina is thicker, meaning the lateral veins are obscure.

Distribution: Malesia, the Solomon Islands, Fiji, and Hawaii; type from Java.

Ecology: a common species of open places in lowland and montane forests below 1,000 m, usually forming large populations on ridges.



Plant (SITW11151)



Rhizome and frond bases (SITW11151)



Sori (SITW11151)



Cross section of basal part of frond (SITW11151)

***Microsorium glossophyllum* (Copel.) Copel.**

Etymology: *glosso* = tongue-shaped; *phyllum* = leaf; referring to the frond shape.

Diagnostic characters: similar to *M. punctatum*, but the fronds of *M. glossophyllum* are larger and thicker textured, and sometimes have a grey glaucous abaxial surface.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon epiphyte found in montane forests at altitudes of 600–1,700 m.



Plants (SITW03499)



Rhizome (SITW03499)



Frond base (SITW03499)

Adaxial surface of lamina
(SITW03499)

***Microsorium linguiforme* (Mett.) Copel.**

Etymology: *linguiforme* = tongue-shaped; referring to the frond shape.

Diagnostic characters: despite the variability in shape of the fronds, this species can be recognized by its broader and shorter fronds than the other *Microsorium* with simple fronds in the Solomon Islands.

Distribution: India, Malesia, the Solomon Islands, and Fiji; type from New Guinea.

Ecology: a very common epiphyte found in lowland forests below 800 m.



Plant (SITW00203)



Rhizome (SITW10473)



Cross section of rhizome (SITW10473)



Venation (SITW10473)

***Microsorium membranifolium* (R.Br.) Ching**

Etymology: *membrana* = skin; *folium* = leaf; referring to the lamina texture.

Diagnostic characters: can be distinguished by its pinnatifid fronds, thin laminae and deeply sunken sori.

Distribution: widely distributed in Asia, Indochina, Malesia, Australia (type locality), and the Pacific Islands.

Ecology: an uncommon species of lowland and coastal forests below 700 m, growing on either rocks, tree roots, or soil.



Plants (SITW05316, photographed by T.-C. Hsu)



Rhizome and stipe bases (SITW05316)



Adaxial surface of lamina (SITW05316)



Adaxial surface of lamina, backlight (SITW05316)

***Microsorium papuanum* (Baker) Parris**

Etymology: *papuanum* = from Papua New Guinea where the type was collected.

Diagnostic characters: can be confused with *M. scolopendria* but differs in having simple fronds and a hanging habit.

Distribution: Malesia and the Pacific Islands; type from Papua New Guinea.

Ecology: an uncommon species of lowland forests below 800 m, usually hanging down at trees of forest margins.

Note: this species was sometimes identified as *M. subgeminatum* (Christ) Copel., a synonym of *M. papuanum*.



Plant (SITWo4893)



Sorus distribution (SITWo4893)



Rhizome (SITW11618)



Adaxial surface of lamina, backlight (SITW11618)

***Microsorium powellii* (Baker) Copel.**

Etymology: named after the British missionary Thomas Powell who collected the type.

Diagnostic characters: the only high mountain species of the genus in the Solomon Islands, with more pinnae (up to 17 pairs) and large, slightly sunken sori arranged in only one row on each side of the midveins.

Distribution: Moluccas, New Guinea, the Solomon Islands, Vanuatu, and Samoa (type locality).

Ecology: a rare species found in high montane forests at altitudes of 1,000–1,700 m.



Plants (SITW05323)



Rhizome scales (SITW10474)



Sori (SITW10474)

Adaxial surface of lamina,
backlight (SITW10474)

***Microsorium punctatum* (L.) Copel.**

Etymology: *punctatum* = dotted, with spots; relating to the many small sori.

Diagnostic characters: can be confused with *M. glossophyllum* but differs by the smaller size and thinner texture of its fronds, and in never being glaucous on the abaxial surface.

Distribution: widely distributed in Paletropics and subtropics; type from China.

Ecology: a very common epiphyte of lowland and coastal forests below 500 m.



Plants, lowland form (SITW05315)



Rhizome, lowland form (SITW05315)



Sorus, lowland form (SITW05315)

***Microsorium scolopendria* (Burm.f) Copel.**

Etymology: *scolopendria* = scolopender, centipede; presumably referring to the habit of the rhizome.

Diagnostic characters: sharing the pinnate fronds with *M. powellii*, but *M. scolopendria* can be distinguished by having broader and shorter pinnae that taper more quickly to the pinnae apex.

Distribution: Paleotropical; type from Sri Lanka.

Ecology: a very common epiphyte of coastal, lowland, and montane forests at altitudes of 0–1,200 m.

Note: the plants of higher altitudes are much smaller and often have trilobed fronds.



Abaxial surface of lamina, lowland form (SITW05315)



Plant, montane form (SITW11177)



Rhizome, montane form (SITW11177)



Sori, montane form (SITW11177)



Adaxial surface of lamina, montane form (SITW11177)



Plant (SITW11164)

***Microsorium* sp.**

Diagnostic characters: similar to both *M. punctatum* and *M. glossophyllum* but can be distinguished from the former by its very thick laminae, obvious lateral veins and strongly raised abaxial surface of its rachises; and from the latter by its prominent lateral veins and abaxial lamina surface not being glaucous

Ecology: an uncommon epiphyte sharing the same habitat with *M. glossophyllum*, usually found near ridges of montane forests at altitudes of 500–1,600 m.



Rhizome and stipe base (SITW11164)



Frond base (SITW11164)



Sori (SITW11164)



Abaxial side of raised rachis (SITW11164)



Venation (SITW11001)



Habitat (SITW10511)

***Oreogrammitis brassii* (Copel.) Parris**

Etymology: named after the Australian botanist Leonard John Brass who collected the type.

Diagnostic characters: distinguished by having short reddish hairs (less than 1 mm) on its laminae, and sori close to the midribs.

Distribution: endemic to the Solomon Islands.

Ecology: an uncommon small epiphyte growing near ridges in mossy forests at altitudes of 400–1,000 m.



Plant (SITW10511)



Rhizome and stipe bases (SITW11690)



Adaxial surface of lamina (SITW11690)



Abaxial surface of lamina (SITW11690)



Venation and sorus distribution (SITW11690)



Habitat (SITW11001)

***Oreogrammitis curtipila* (Parris) Parris**

Etymology: *curti* = short; *pilis* = hairy; referring to the hairs on its lamina.

Diagnostic characters: can be distinguished by the very short white hairs (ca. 0.2 mm) on the laminae and marked hydathodes on the adaxial surface.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: a rare epiphyte found in mossy forests usually near summits at ca. 1,000 m.



Rhizome and frond bases (SITW11001)



Adaxial surface of lamina (SITW11001)



Rhizome scales and stipe bases (SITW11683)



Abaxial surface of lamina (SITW11001)



Venation (SITW11001)



Plant (SITWo4940)



Rhizome scales (SITWo7590)



Sori (SITWo7590)



Adaxial surface of lamina (SITWo7590)

***Oreogrammitis pleurogrammoides* (Rosenst.) Parris**

Etymology: *Pleurogramma* = a fern genus; *oides* = like, similar; referring to the resemblance to the species of *Pleurogramma*.

Diagnostic characters: can be recognized by the very thick, glabrous fronds with deeply sunken sori.

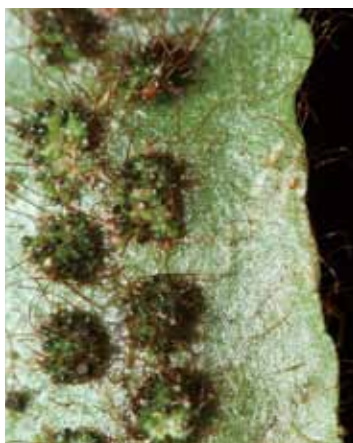
Distribution: New Guinea (type locality), the Solomon Islands, and Fiji.

Ecology: a rare epiphyte usually found in ridge forests at altitudes of 1,000–1,600 m.

Note: newly recorded for the Solomon Islands.



Plants (SITW11019)

Rhizome and stipe bases
(SITW11019)

Sori (SITW07602)

Abaxial surface of lamina
(SITW11019)

***Oreogrammitis reinwardtii* (Blume) Parris**

Etymology: named after the Dutch botanist Caspar Georg Carl Reinwardt who collected the type.

Diagnostic characters: can be distinguished by the combination of characters of lamina hairs being red-brown, long (over 1 mm) and unbranched, and the veins being prominent and slightly darker on both surfaces of the laminae.

Distribution: widely distributed in Asia, Indochina, Malesia, Australia, and the Solomon Islands; type from Sulawesi.

Ecology: an uncommon epiphyte found in montane mossy forests at altitudes of 750–1,650 m.



Plant (SITWo5679)

***Oreogrammitis torricelliana* (Brause) Parris**

Etymology: *torricelliana* = from Torricelli Mountains in Papua New Guinea, where the type was collected.

Diagnostic characters: a larger species with fronds up to 16 cm long, with red-brown, simple, short hairs (ca. 0.2 mm) present on the lamina margins, midveins and surfaces, and usually with more than one row of sori on each side of the midvein.

Distribution: the Philippines, New Guinea (type locality), and the Solomon Islands.

Ecology: a rare epiphyte of damp montane forests at altitudes of 600–1,000 m, usually growing on tree branches above streams.

Note: newly recorded for the Solomon Islands.



Rhizome and stipe bases (SITW03015)



Sori (SITW05679)



Venation (SITW05679)



Adaxial surface of lamina (SITW05679)



Plant (SITWo4933)

***Prosaptia contigua* (G.Forst.) C.Presl**

Etymology: *contigua* = adjoining; referring to its pinnae.

Diagnostic characters: can be distinguished from other *Prosaptia* in the Solomon Islands by having rather narrow pinnae, both apical and marginal sori, and narrow wing along rachis.

Distribution: widely distributed in Asia, Malesia, Australia, and the Pacific Islands; type from French Polynesia.

Ecology: an uncommon epiphyte usually found in damp mossy forests at altitudes of 500–1,800 m.



Rhizome and stipe bases (SITW11679)



Adaxial surface of lamina, backlight (SITW11679)



Frond base (SITW11679)



Adaxial surface of lamina (SITW11679)



Sori (SITW05630)



Habitat (SITW10450)

Rhizome and stipe bases
(SITW10450)

Sori (SITW05410)



Adaxial surface of lamina (SITW11175)

***Prosaptia rosenstockii* Copel.**

Etymology: named after the German Pteridologist Eduard Rosenstock.

Diagnostic characters: can be distinguished from *Prosaptia* sp. by having apical and marginal sori, and from *P. contigua* by having the broad wing along a rachis.

Distribution: New Guinea (type locality) and the Solomon Islands.

Ecology: an uncommon epiphyte usually growing on trees along streams in primary lowland forests below 500 m.

Note: this species was sometimes misidentified as *P. alata* (Blume) Christ, a species from Java.



Plant (SITW11680)



Rhizome and stipe bases (SITW11680)



Adaxial surface of lamina
(SITW11680)



Abaxial surface of lamina
(SITW11680)

***Prosaptia* sp.**

Diagnostic characters: the largest *Prosaptia* in the Solomon Islands can also be distinguished by having abaxial rather than marginal sori.

Ecology: a rare epiphyte only recorded in mossy forests of Guadalcanal at altitudes of 900–1,300 m.



Plants (SITW07675)



Sori (SITW06813)



Rhizome (SITW10494)



Sterile frond (SITW10494)

***Pyrrosia fallax* (Alderw.) M.G.Price**

Etymology: *fallax* = deceptive, false; presumably referring to the resemblance to species of *Lemmaphyllum*.

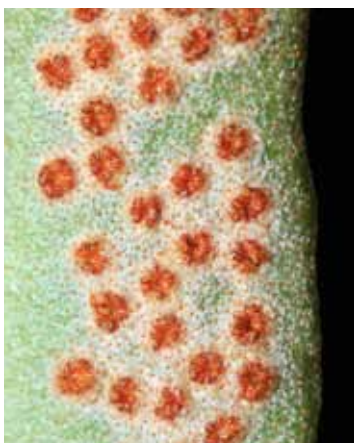
Diagnostic characters: this species is unlike the other two *Pyrrosia* species of the Solomon Islands in being much smaller, having dimorphic fronds, and the sori being linear.

Distribution: Moluccas, New Guinea (type locality), and the Solomon Islands.

Ecology: an uncommon epiphyte of lowland forests below 500 m.



Plants (SITW11099)



Sori (SITW05328)

Abaxial surface of lamina
(SITW11099)Adaxial surface of lamina
(SITW11099)

***Pyrrosia lanceolata* (L.) Farw.**

Etymology: *lanceolata* = narrowed and tapered at both ends; referring to the frond shape.

Diagnostic characters: the fronds are not as long and are less rigid than those of *P. longifolia*. The rhizome scales of this species have marginal hairs and are elongated, rather than round as in *P. longifolia* (hand lens needed).

Distribution: throughout Paleotropics; type from Sri Lanka.

Ecology: a very common epiphyte on trees in open ground, especially coastal.



Plants (SITW11026)

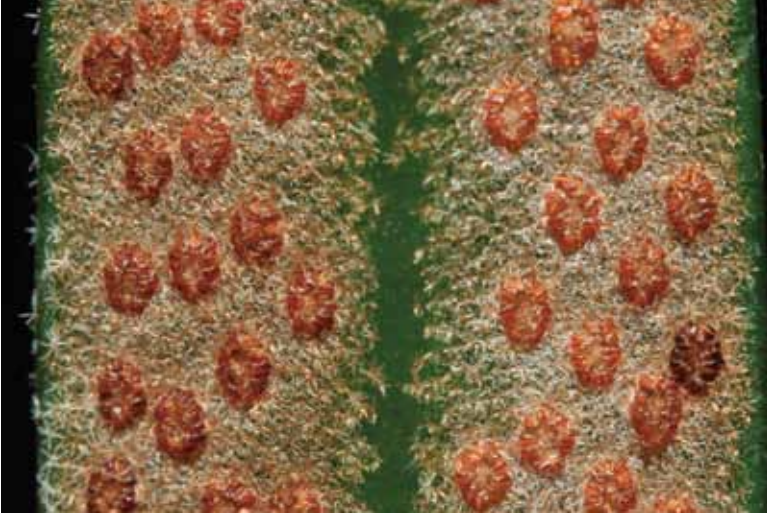
***Pyrrosia longifolia* (Burm.f.) C.V.Morton**

Etymology: *longifolia* = with long leaves; referring to the elongated fronds.

Diagnostic characters: distinguished from *P. lanceolata* by the longer, stiffer fronds, always with an apex that is tapering and never blunt. The rhizome scales are circular rather than elongate.

Distribution: from Indochina to Australia and the Pacific Islands; type from Java.

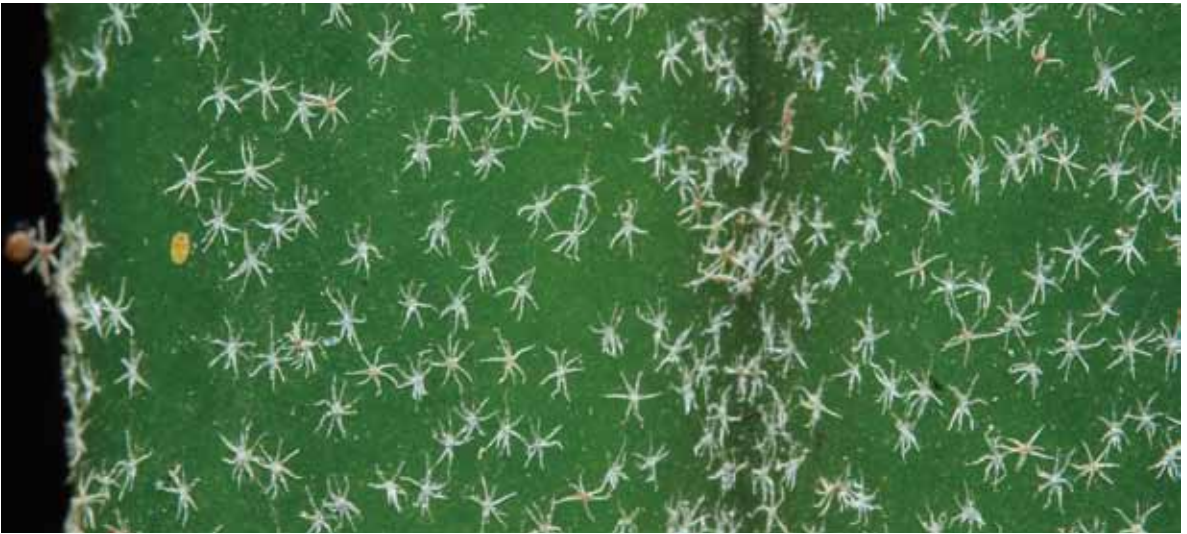
Ecology: a less common epiphyte than *P. lanceolata*, growing on trees in open ground, most common coastally.



Sori (SITW11026)



Abaxial surface of lamina (SITW11026)



Hairs on adaxial lamina (SITW11026)



Sorus distribution, backlight (SITW11026)



Rhizome scales (SITW11026)



Plants (SITW11684)

***Radiogrammitis graminella* (C.Chr.) Parris**

Etymology: *gramini* = grass-like; *ella* = diminutive suffix; referring to the small fronds.

Diagnostic characters: differs from *Radiogrammitis* sp. by having rather short hairs (ca. 0.2 mm), branched lateral veins and sori close to the midribs.

Distribution: the Solomon Islands and Samoa (type locality).

Ecology: a rare epiphyte found in high montane mossy forests at altitudes of 1,000–1,500 m.

Note: newly recorded for the Solomon Islands.



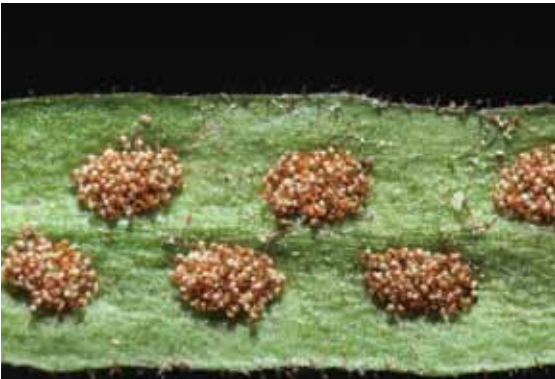
Rhizome and stipe bases (SITW11684)



Adaxial surface of lamina, backlight (SITW11684)



Adaxial surface of lamina (SITW11684)



Sori (SITW11684)



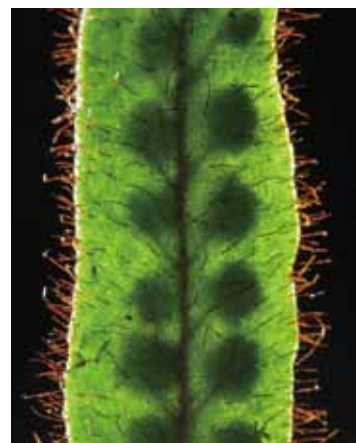
Frond base (SITW11684)



Plants (SITW11054)

Rhizome and frond bases
(SITW11054)

Sori (SITW11054)

Adaxial surface of lamina,
backlight (SITW11054)

***Radiogrammitis* sp.**

Diagnostic characters: differs from *R. graminella* by having rather long hairs (ca. 1 mm), unbranched lateral veins and sori on the vein ends.

Ecology: a rare species only recorded from Vanikoro (but locally common), growing on rocks along streams at lowland primary forests.



Plants (SITWo4878)

Rhizome and frond bases
(SITWo7595)Adaxial surface of lamina
(SITWo7595)Abaxial surface of lamina
(SITWo7595)

***Scleroglossum sulcatum* (Kuhn) Alderw.**

Etymology: *sulcatum* = grooved; referring to the sori.

Diagnostic characters: can be distinguished by the erect rhizome with radially attached fronds, and the linear sori distant from the margin.

Distribution: Sri Lanka (type locality), Indochina, throughout Malesia, and the Pacific Islands.

Ecology: a rare epiphyte of montane forests on exposed ridges at altitudes of 900–1,500 m.



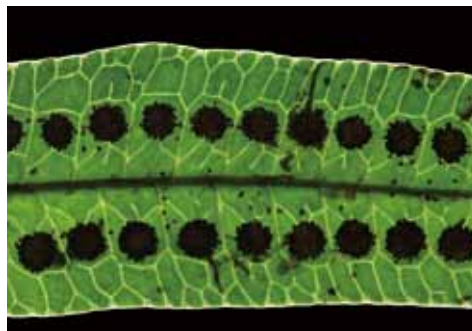
Plant (SITWo4895)



Rhizome (SITWo4895)



Adaxial surface of pinna (SITWo4895)



Venation and sorus distribution (SITWo4895)

***Selliguea albidosquamata* (Blume) Parris**

Etymology: *albido* = white; *squamatus* = scaly; referring to the white waxy and scaly rhizome.

Diagnostic characters: the only pinnate *Selliguea* species in the Solomon Islands, and further distinguished by the white hydathodes on the adaxial surface of the pinnae.

Distribution: throughout Malesia and the Solomon Islands; type from Celebes.

Ecology: a rare epiphyte found in high montane forests above 1,500 m, growing on mossy trunks on ridges.



Habitat (SITW11664)



Abaxial surface of lamina (SITW11664)



Rhizome (SITW11664)



Adaxial surface of lamina, backlight (SITW11664)

***Selliguea enervis* (Cav.) Ching**

Etymology: *enervis* = apparently lacking nerves; referring to the obscure venation.

Diagnostic characters: a smaller, less common species than *S. plantaginea* and with a thinner texture. Usually found as an epiphyte whereas *S. plantaginea* is often on mossy hummocks on ridges.

Distribution: Indochina, Malesia, and the Solomon Islands; type from Luzon.

Ecology: an uncommon epiphyte found in montane forests on ridges at altitudes of 250–1,200 m.



Plants (SITW04920)



Rhizome (SITW04920)



Sori (SITW04920)



Venation (SITW10591)

***Selliguea plantaginea* Brack.**

Etymology: *plantaginea* = plantain-like; referring to the frond shape.

Diagnostic characters: can be distinguished by the dimorphic fronds, with the sterile fronds broadly ovate while the fertile fronds are much narrower, although the width is variable.

Distribution: Malesia and the Pacific Islands; type from Tahiti.

Ecology: a very common species of montane forests, usually near ridges and summits at altitudes of 500–2,100 m.



Plant (SITW07558)



Rhizome and young frond (SITW07558)



Sorus distribution (SITW07558)



Adaxial surface of lamina (SITW07558)

***Themelium tenuisectum* (Blume) Parris**

Etymology: *tenuisectum* = finely divided; referring to the lamina.

Diagnostic characters: can be distinguished by its finely divided fronds (2-pinnate).

Distribution: Taiwan, Malesia, the Solomon Islands, and Samoa; type from Java.

Ecology: a rare epiphyte of montane forests, growing on tree trunks or on mossy humps on the forest floor at altitudes of 1,500–2,100 m.



Plant (SITW11676)

***Tomophyllum subrepandum* (Christ) Parris**

Etymology: *sub* = similar, nearly; *repandus* = with a slightly wavy margin; referring to the similarity with another congeneric species *T. repandum* (Mett.) Parris.

Diagnostic characters: a small epiphyte with a short erect rhizome and pinnate fronds, and with pinnae narrow and crenate on their margin.

Distribution: Kalimantan (type locality), Papua New Guinea, and the Solomon Islands.

Ecology: a rare epiphyte found in mossy forests at ca. 1,000 m.

Note: newly recorded for the Solomon Islands.



Rhizome and frond bases (SITW11676)



Frond base (SITW11676)



Rhizome scales (SITW11676)



Adaxial surface of frond, backlight (SITW11676)



Sori (SITW11676)

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FIELD TRIPS IN THE SOLOMON ISLANDS

Five years, 16 islands, 34 field trips, 341 days, 2,641 collections, 10,699 specimen sheets, nearly 20,000 photographs, and countless friends, together we have made this book possible. More photos are available on Cheng Wei's facebook (<https://www.facebook.com/chengwei.chen.94>).



July 2015, Elifolo, North Malaita, Malaita Province.





July 2013, Mt. Veve, Kolombangara, Western Province.





July 2014, Lake Tengano, Rennell, Rennell and Bellona Province.





17 July 2015, Moffat processing specimens at night, Ibu Rano lodge, Kolombangara Island, Western Province.





7 July 2015, Moffat examining a fern by hand lens, Kirakira, Makira Island, Makira-Ulawa Province.

APPENDIX. Chinese description of lycophyte and fern families of the Solomon Islands

LYCOPODIACEAE

石松科

地生或附生；莖匍匐、懸垂、攀爬、或短直立，二叉分枝；葉小，鱗片狀，輻射狀排列於莖上或少數排成二列；孢子囊腎形，單生於孢子葉腋，孢子葉明顯或不明顯集生於枝條末端，或形成孢子囊穗；孢子同型、三溝型、圓球狀。全世界 16 屬約 388 種；索羅門群島有 5 屬約 19 種，本書介紹其中 14 種。

SELAGINELLACEAE

卷柏科

地生、岩生或偶有附生；根莖直立、匍匐或攀緣，有時具根狀的根支體；葉單一，具單一脈，螺旋狀排列或成四列排列，後者具兩排中葉與兩排側葉；孢子囊穗頂生，四方柱型或扁平；孢子囊兩型，單生於孢子葉腋；孢子有大小兩型，均為三溝型、圓球狀。

全世界 1 屬約 700 種；索羅門群島約有 15 種，本書介紹其中 12 種。

EQUISETACEAE

木賊科

地生；根莖匍匐於地下，並具直立綠色地上莖；地上莖具脊，中空，枝條自節處輻射生出、環狀排列；葉退化成鞘狀，具短鋸齒；孢子囊位於盾狀孢子囊枝之內面，形成頂生孢子囊穗；孢子綠色。

全世界 1 屬約 15 種；索羅門群島有 1 亞種。

PSILOTACEAE

松葉蕨科

附生或少數地生；假根匍匐、棕色，不具根；地上枝直立或懸垂，綠色，分枝或不分枝；葉小或鱗片狀，螺旋狀排列或對生，脈單一或無；孢子囊合生成單體孢子囊群，壁厚，縫裂；孢子豆形，單溝型，每一孢子囊之孢子數超過千個。

全世界 2 屬約 17 種；索羅門群島有 2 屬 5 種，本書介紹其中 4 種。

OPHIOGLOSSACEAE

瓶爾小草科

地生或少數附生，植株通常較小、肉質；根莖多直立，或少數橫走；葉半二型，分化成行光合作用的營養枝與具孢子的孢子枝；孢子囊壁厚，縫裂，無環帶；孢子三溝型，圓球狀，每一孢子囊之孢子數超過千個。

全世界 10 屬約 112 種；索羅門群島有 3 屬 6 種。

MARATTIACEAE

合囊蕨科

地生或偶有附生；根莖直立，斜升或匍匐；葉同型或少數二型，單葉、掌狀裂葉或羽狀複葉，葉或羽片基部具葉枕，葉脈游離或網狀；孢子囊群不具真孢膜，孢子囊壁厚，完全合生或部分合生成單體孢子囊群；孢子單溝或三溝型。

全世界 6 屬約 111 種；索羅門群島有 3 屬約 4 種。

OSMUNDACEAE

紫萁科

地生或偶有岩生；根莖直立；葉一至三回羽狀複葉，幼葉常被毛，二型、半二型或少數同型，葉脈游離；孢子囊多集生成孢子囊群，而沿葉脈生長或全面覆蓋窄縮的孕性葉，孢子囊大型，具有 128–512 孢子；孢子綠色，三溝型。

全世界 6 屬約 18 種；索羅門群島有 1 種。

HYMENOPHYLLACEAE

膜蕨科

植株微小至中等，地生、附生或岩生；根莖細，多匍匐或少數直立；葉同型、膜質，葉肉僅具一層細胞，單葉至多回分裂，葉脈游離；孢子囊群邊緣生，孢膜錐狀、管狀或兩瓣狀，常具孢子囊托；孢子綠色，圓球狀，三溝型。

全世界 9 屬約 434 種；索羅門群島有 7 屬約 45 種，本書介紹其中 34 種。

DIPTERIDACEAE

雙扇蕨科

地生；根莖長匍匐，被剛毛或具有關節之毛；葉單一或分裂，同型或二型，葉脈網狀，脈網眼內具游離小脈；孢子囊形成孢子囊群或全面散生，不具孢膜；孢子橢圓單溝型或四面體型三溝型。

全世界 2 屬約 11 種，索羅門群島僅 1 種。

GLEICHENIACEAE

裏白科

地生，常攀爬；根莖長匍匐；葉具無限生長與假二叉分枝之特性，葉脈游離；孢子囊群不具孢膜，生於葉之遠軸面（下表面），每一孢子囊群具 5–15 個孢子囊，每一孢子囊具 128–800 顆孢子；孢子圓球狀四面體型或豆型。

全世界 6 屬約 157 種；索羅門群島有 4 屬 11 種，本書介紹其中 8 種。

LYGODIACEAE

海金沙科

攀援性蕨類；根莖匍匐，被毛；葉具無限生長之特性，以中肋纏繞攀爬，羽片假二叉分枝，孕性與營養羽片兩型；孢子囊二列排列於孕性羽片；孢子圓球狀三溝型。

全世界 1 屬約 40 種；索羅門群島有 5 種，本書介紹其中 4 種。

SCHIZAEACEAE

莎草蕨科

地生；根莖短匍匐或成塊莖；葉單一或二叉分枝，似禾草，葉脈游離；孢子囊群位於葉片頂端之梳狀或指狀構造，環帶頂生，每個孢子囊具有 128–256 個孢子，不具孢膜；孢子單溝型。

全世界 2 屬約 35 種；索羅門群島有 2 屬 6 種，本書介紹其中 5 種。

DICKSONIACEAE

蚌殼蕨科

地生；莖多直立呈樹幹狀或少數匍匐，被毛；葉大型，同型或二型，2–3 回羽狀複葉，葉脈游離，單一或分叉；孢子囊群位於葉遠軸面（下表面），邊緣生，具孢膜 (*Calochlaena* 及 *Dicksonia* 屬) 或無 (*Lophosoria* 屬)，孢膜二瓣狀或杯狀；孢子圓球形或四面體形，三溝型。

全世界 3 屬 35 種；索羅門群島有 2 屬 3 種。

CYATHEACEAE

桫欏科

地生，多大型；莖直立樹幹狀，頂端被鱗片，有時混生毛；葉通常大型，一至三回羽狀複葉，或偶單葉，葉脈單一或分叉，游離；孢子囊群分布於葉下表面或邊緣生，圓形，具不同型式之孢膜或無；孢子三溝型四面體。

全世界 3 屬約 643 種；索羅門群島有 3 屬約 18 種，本書介紹其中 10 種。

SACCOLMATACEAE

袋囊蕨科

地生；根莖短匍匐至直立；葉一至多回羽狀複葉，光滑或被毛，毛不具關節，葉脈游離；孢子囊群位於葉脈頂端，孢膜袋狀或杯狀；孢子圓球狀四面體形。

全世界 1 屬 18 種；索羅門群島有 1 變種。

CYSTODIACEAE

齒囊蕨科

地生；根莖直立，被金色毛；葉同型，一至二回羽狀複葉，光滑或被毛，葉肉質地厚，葉脈游離，單一或分叉；孢子囊群邊緣生，位於小脈末端，由葉緣反捲之假孢膜與一真孢膜包被；孢子球狀三溝型，具腺體。

全世界 1 屬 2 亞種（具地理區隔）；索羅門群島有 1 亞種。

LINDSAEACEAE

鱗始蕨科

地生、岩生或附生；根莖短至長匍匐，被毛與鱗片；葉 1 至 3 回羽狀複葉或更分裂，多光滑，葉脈多游離，若為網狀亦無游離小脈；孢子囊群邊緣至亞邊緣生，孢膜向葉緣開裂；孢子單溝或三溝型。

全世界 7 屬約 234 種；索羅門群島有 4 屬約 30 種，本書介紹其中 24 種。

PTERIDACEAE

鳳尾蕨科

大部分地生或岩生，也有附生與極少數的水生；根莖直立、斜升或匍匐，通常被鱗片；葉大部分同型，單葉或一至四回羽狀複葉，少數指狀或掌狀，葉脈游離或網狀但不具游離小脈；孢子囊群多沿脈生，或陷於溝中，或覆蓋於反捲之葉緣下，或全面散生，無真正之孢膜；孢子單溝或三溝型。

全世界 53 屬約 1,211 種；索羅門群島有 13 屬 48 種，本書介紹其中 39 種。

DENNSTAEDTIACEAE

碗蕨科

地生或少數蔓生；根莖長匍匐，被毛；葉多數大型，一至四回羽狀複葉；葉脈游離或網狀，網眼內不具游離小脈；孢子囊群邊緣或亞邊緣生，圓球形，具杯狀孢膜或由葉緣反捲之假孢膜所覆蓋；孢子三溝或單溝型。

全世界 10 屬 265 種；索羅門群島有 5 屬 10 種，本書介紹其中 7 種。

DIPLAZIOPSISACEAE

腸蕨科

地生或岩生；根肉質，無不定芽；根莖直立至亞直立或短匍匐，被批針形、非窗格狀鱗片；葉單型，無不定芽，軟草質，一回羽狀複葉，葉脈游離或於葉緣結合但無游離小脈；孢子囊群單一、長形，沿脈生長，或少數成對沿脈背對背排列，具孢膜；孢子單溝型。

全世界 2 屬約 4 種；索羅門群島僅 1 種。

ASPLENIACEAE

鐵角蕨科

地生、岩生或附生；根莖匍匐、斜升或亞直立；葉同型，單葉至多回羽狀複葉，葉脈游離或少數於近葉緣處具結合脈（巢蕨類）；孢子囊群長形，沿脈生，具孢膜；孢子豆形、單溝型。

全世界 2 屬約 730 種；索羅門群島有 2 屬超過 33 種，本書介紹其中 22 種。

BLECHNACEAE

烏毛蕨科

地生或岩生，少數攀緣；根莖匍匐、斜升或直立，少數呈樹幹狀；葉少數二型，大多數同型，羽狀裂葉至複葉或更多回裂葉，嫩葉通常紅色；葉脈游離至不同程度之網狀結合，但不具游離小脈；孢子囊群長形，與末羽軸平行；孢子豆形，單溝型。

全世界 7 屬約 265 種；索羅門群島有 2 屬 8 種。

ATHYRIACEAE

蹄蓋蕨科

地生或岩生，有些生長於溪澗邊；根莖短至長匍匐、或亞直立至直立，被鱗片；葉同型，偶有不定芽，軟草質至革質，單葉至三回羽狀裂葉，葉脈游離或網狀但不具游離小脈；孢子囊群通常長形，也有圓形至 J 型，單一或成對沿脈背對背排列，通常具孢膜；孢子單溝型。

全世界 3 屬約 650 種；索羅門群島有 2 屬約 20 種，本書介紹其中 14 種。

THELYPTERIDACEAE

金星蕨科

地生或岩生，少數附生；根莖直立、斜升、或長匍匐，先端常被鱗片；葉簇生或遠生，同型或少數亞二型，單葉至二回羽狀裂葉，草質、紙質或少數革質，常被單細胞針狀毛，少有鱗片；孢子囊群圓球形或短線形，孢膜腎形或無孢膜；孢子多單溝型，少數三溝型。

全世界 30 屬約 1,034 種；索羅門群島有 11 屬約 60 種，本書介紹其中 34 種。

DIDYMOCHLAENACEAE

翼囊蕨科

地生；根莖直立，被紅棕色、非窗格狀鱗片；葉二回羽狀複葉，長橢圓形，小羽片分離、不對稱，似許多鱗始蕨屬 (*Lindsaea*) 的植物，葉脈游離；孢子囊群接近小羽片上緣，沿葉脈方向略呈長方橢圓形，以中心部位附着，具孢膜；孢子長橢圓至球形，單溝型。

單屬科，全世界僅 1 種。

HYPODEMATIACEAE

腫足蕨科

附生、岩生或偶有地生；根莖短至長匍匐，密被鱗片與毛或僅有鱗片；葉同型，三角形，三至四回羽狀複葉，被毛（腫足蕨屬，*Hypodematum*）或光滑（大膜蓋蕨屬，*Leucostegia*），葉脈游離；孢子囊群具腎形或杯狀孢膜；孢子橢球形，單溝型。

全世界 2 屬約 22 種；索羅門群島僅有 1 種。

DRYOPTERIDACEAE

鱗毛蕨科

地生、岩生、半附生或附生；根莖匍匐、斜升或直立，少數蔓性或攀緣，先端具非窗格狀鱗片；葉同型或少數二型，葉脈羽狀或分叉，游離至不同程度之網狀脈，游離小脈有或無；孢子囊群圓形、具孢膜，或全面散生而無孢膜；孢子豆形、單溝型。

全世界 26 屬約 2,115 種；索羅門群島有 8 屬 21 種，本書介紹其中 18 種。

NEPHROLEPIDACEAE

腎蕨科

地生、附生或岩生；根莖由兩部分組成：長葉之直立莖與長根之匍匐莖；葉遠生或簇生，一回羽狀複葉，葉脈游離分叉；孢子囊群位於小脈先端，孢膜圓形、腎形或月形；孢子單溝型。

全世界 1 屬約 19 種；索羅門群島有 5 種並介紹於本書中。

LOMARIOPSISACEAE

蘿蔓藤蕨科

地生、攀緣或附生；根莖斜升或長匍匐，密被鱗片；葉同型或二型，一回羽狀複葉至二回羽裂，羽片與中肋交接處具關節或無，葉脈游離；孢子囊群具孢膜或無，分散或全面生；孢子橢圓至圓球形，單溝型。

全世界 5 屬約 70 種；索羅門群島有 3 屬 4 種，本書介紹其中 3 種。

TECTARIACEAE

三叉蕨科

地生、岩生或攀緣；根莖直立或匍匐，先端被鱗片；葉同型或明顯二型，單葉至不同程度之分裂，葉脈游離或網狀，網眼內具游離小脈；孢子囊群多圓球形，有時長形或全面散生，孢膜腎形或無；孢子單溝型。

全世界 7 屬約 250 種；索羅門群島有 2 屬約 25 種，本書介紹其中 20 種。

OLEANDRACEAE

蓀蕨科

地生但同時具攀緣性之根莖，或附生；根莖粗硬，密被盾狀鱗片；單葉，狹橢圓形，先端漸尖或突尖，全緣，葉脈游離，相近，近平行，常在中肋處分叉；孢子囊群在中肋與葉緣間之脈上，一或多列，孢膜腎形；孢子單溝型。

全世界 1 屬約 15 種；索羅門群島有 3 種，本書介紹其中 2 種。

DAVALLIACEAE

骨碎補科

附生或有時岩生；根莖長匍匐，被盾狀長漸尖之鱗片；單葉至三回羽狀複葉，葉多少二型，孕性葉較分裂，且裂片較細窄，葉光滑，通常革質，葉脈游離；孢子囊群在脈末端近葉緣處，孢膜袋狀，兩側及基部附著葉片，開口朝葉緣；孢子黃色，豆形，單溝型。

全世界 1 屬約 65 種；索羅門群島有 12 種，本書介紹其中 11 種。

POLYPODIACEAE

水龍骨科

附生或岩生為主，少數地生；根莖大多短至長匍匐，極少直立，被鱗片；葉同型或二型，多單葉至一回羽狀裂葉或複葉，極少分裂更多，葉脈通常網狀，游離小脈有或無，極少游離脈；孢子囊群圓球形、橢圓形、長形或全面散生，無孢膜；孢子豆形單溝或圓球形三溝（後者大多為禾葉蕨類群）。

全世界 65 屬約 1,652 種；索羅門群島有 20 屬約 70 種，本書介紹其中 51 種。

INDEX TO SCIENTIFIC NAMES

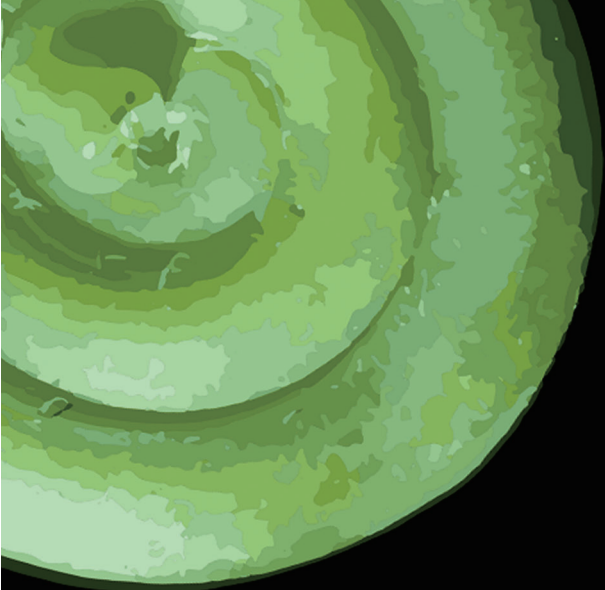
Page numbers of main treatments are **bold**. Families, genera, and species not illustrated in this book and synonyms are indicated with an asterisk (*).

A			<i>callifolium</i>	223	<i>tenerum</i>	297
<i>Abrodictyum</i>	38	98	<i>megistophyllum</i>	224	<i>teratophylloides*</i>	286
<i>asaе-grayi</i>		100	<i>plantagineum</i>	225	sp.	298
<i>caudatum</i>	102	103	<i>semicostatum*</i>	227	ATHYRIACEAE	39 312
<i>cumingii*</i>		98	<i>smithii</i>	226	<i>Athyrium*</i>	312
<i>dentatum*</i>		104	<i>solomonense</i>	225	<i>Austroblechnum*</i>	301
<i>flavofuscum</i>	102	103	<i>subfalcatum</i>	226	<i>Austrogramme</i>	39 215 216
<i>obscurum</i>		104	<i>Arthrobotrya</i>	382	<i>decipiens</i>	230
<i>pluma</i>	100	106	<i>articulata</i>	385	B	
<i>schlechteri</i>		107	<i>Arthropteris</i>	39	<i>Belvisia*</i>	484
<i>Acrosorus</i>	39	457	<i>palisotii</i>	419	<i>mucronata*</i>	484
<i>reineckei</i>		461	ASPLENIACEAE	39 272	BLECHNACEAE	38 39 300
<i>Acrostichum</i>	38 215	216		377	<i>Blechnopsis*</i>	302
<i>speciosum</i>	15	218	<i>Asplenium</i>	39	<i>Blechnum</i>	39 300
<i>Actinostachys</i>	38	155	<i>acrobryum</i>	275	<i>capense*</i>	302
<i>digitata</i>		156	<i>affine</i>	276	<i>melanocaulon</i> subsp. <i>pallens</i>	301
<i>wagneri</i>		157	<i>amboinense</i>	275	<i>nesophilum</i>	302
<i>Adiantum</i>	38 215	216	<i>atrovirens</i>	278	<i>orientale</i>	13 302 303
<i>aneitense</i>		219	<i>australasicum</i>	9 279	<i>vittatum</i>	304
<i>diaphanum</i>	219	220		290	<i>vulcanicum</i>	305 306
<i>monosorum</i>	17	221	<i>bipinnatifidum</i>	280	sp.	306
<i>philippense</i>		222	<i>caudatum</i>	281	<i>Bolbitis</i>	39 382 383 412
<i>Aglaomorpha</i>	39	457	<i>cromwellianum</i>	282	<i>heteroclita</i>	386
<i>drynarioides</i>	462	463	<i>cuneatum*</i>	276	<i>quoyana</i>	387 388
<i>heraclea</i>	462	463	<i>durvillei*</i>	283	<i>rivularis</i>	387 388
<i>parkinsonii</i>		464	<i>insulanum</i>	283	C	
<i>rigidula</i>	465	466	<i>laserpitiifolium*</i>	276	<i>Callistopteris</i>	38 98 99
<i>sparsisora</i>	465	466	<i>lobulatum</i>	284	<i>apiifolia</i>	108
<i>Alsophila</i>	38	166	<i>ludens*</i>	286	<i>Calochlaena</i>	38 161
<i>alta</i>		167	<i>marattioides</i>	286	<i>straminea</i>	162
<i>archboldii</i>		168	<i>musifolium</i>	279	<i>Calymmodon</i>	39 457 461
<i>hornei</i>	7	169	<i>nidus*</i>	279	<i>cucullatus*</i>	468
<i>rigens</i>		170	<i>nigrescens</i>	289	sp. 1	468
<i>solomonensis</i>	171	173	<i>oblanceolatum</i>	279 288	sp. 2	470
<i>Amblovenatum</i>	39 332	333		290	sp. 3	471
<i>pseudostenobasis</i>		335	<i>oblongifolium*</i>	283	<i>Cephalomanes</i>	38 98 99
<i>Amphineurion*</i>		335	<i>pellucidum</i>	291	<i>acrosorum</i>	109
ANEMIACEAE*	150 155		<i>polyodon</i>	289 292	<i>atrovirens</i>	110 111
<i>Angiopteris</i>	38	88	<i>powellii</i>	293	<i>javanicum</i>	110 111
<i>evecta*</i>		89	<i>sancti-christophori</i>	292 294	<i>Ceratopteris</i>	39 215 216
<i>microura</i>	9	89	<i>schizocarpum</i>	296	<i>thalictroides</i>	231
<i>Antrophyum</i>	39 215	216	<i>stenochlaenoides*</i>	286		

<i>Cheilanthes</i>	39 215	216	CYSTODIACEAE	38 178	180	DIDYMOCHLAENACEAE	39
<i>tenuifolia</i>	15 19	234			182		377
<i>Cheiropleuria</i> *		137	<i>Cystodium</i>	38	180	<i>Didymoglossum</i>	38 98 99
<i>Chingia</i>	39 332	333	<i>sorbifolium</i> subsp.			<i>beccarianum</i>	121
<i>longissima</i>		336 337	<i>solomonense</i>		181	<i>mindorense</i>	122
<i>malodora</i>	11 336	337	D			<i>motleyi</i> *	121
<i>Christella</i>	39 332	333	<i>Davallia</i>	39	444	<i>tahitense</i>	121 123 124
<i>dentata</i>		338 339	<i>denticulata</i> var. <i>elata</i>		445	sp.	124
<i>harveyi</i> var. <i>harveyi</i>	13	339		454		<i>Diphasium</i> *	40
sp.		340	<i>epiphylla</i> *		445	DIPLAZIOPSISIDACEAE	39 272
<i>Christensenia</i>		38 88	<i>heterophylla</i>		446	<i>Diplaziopsis</i>	39 272
<i>aesculifolia</i>		90	<i>hirsuta</i> *		450	<i>javanica</i>	273
<i>Chrysogrammitis</i>	39 457	458	<i>kinabaluensis</i>	447 451 452		<i>Diplazium</i>	39 272 312
<i>musgraviana</i>		472		455		<i>bantamense</i> *	322
<i>Coniogramme</i>	39 215	216	<i>pectinata</i>		448 453	<i>cominsii</i>	320 314
<i>fraxinea</i>		233	<i>pentaphylla</i>		449	<i>cordifolium</i>	316
<i>Coryphopteris</i>	39 332	333	<i>pubescens</i>		450	<i>dameriae</i>	317
<i>kolombangarae</i>		342 343	<i>pusilla</i>		451 455	<i>dilatatum</i>	318
<i>pubirachis</i> var. <i>major</i>		342	<i>repens</i> *	447 451 452 455		<i>esculentum</i>	319
		343 344	<i>serrata</i>		447 452	<i>harpeodes</i>	320
<i>subbipinnata</i>		344	<i>sessilifolia</i>		448 453	<i>oblongifolium</i>	322
<i>Cranfillia</i> *		305	<i>solida</i>	15 445	454	<i>proliferum</i>	11 324 328
<i>Crepidomanes</i>	38 98	99	sp.		455	<i>schlechteri</i>	325
<i>aphlebioides</i>		9 112	DAVALLIACEAE	39 380 381		<i>squamuligerum</i>	326
<i>bipunctatum</i>		113 114		440 444		<i>stipitipinnula</i>	316 328
<i>grande</i> *		115	<i>Dennstaedtia</i>	39 260 270		<i>weinlandii</i>	330
<i>humile</i>		114	<i>glabrata</i>		262	sp.	331
<i>intermedium</i>		115 136	<i>hirsuta</i> *		450	<i>Diplopterygium</i>	38 140
<i>kurzii</i>		116	<i>samoensis</i>		264	<i>clemensiae</i>	144 146
<i>minutum</i>	117 118 119 120		<i>tripinnatifida</i> *		262	<i>longissimum</i>	146
<i>proliferum</i> *		117	DENNSTAEDTIACEAE	39 178		DIPTERIDACEAE	38 137
<i>saxifragoides</i>		117 118		182 260 377		<i>Dipteris</i>	38 137
<i>vitiense</i>		119	<i>Deparia</i>	39 312		<i>conjugata</i>	7 138
sp.		117 120	<i>petersenii</i>		313	<i>pseudostenobasis</i> *	335
<i>Ctenitis</i>	39 382	383 418	<i>Dicksonia</i>	38 161 180		<i>stenobasis</i> *	335
<i>aciculata</i>		389	<i>brackenridgei</i>		164	<i>Draconopteris</i> *	418
<i>Ctenitopsis</i> *		418	<i>sciurus</i>	7 162 164	165 169	<i>Drynaria</i> *	462 465
<i>Ctenopterella</i>	39 457	458			190	<i>Dryopolystichum</i>	39 412
<i>blechnoides</i>		473 474	DICKSONIACEAE	38 161 166		<i>phaeostigma</i>	414
<i>seemannii</i> *		474	<i>Dicranopteris</i>	26 38 140		<i>Dryopsis</i> *	418
sp.		474	<i>linearis</i> var. <i>altissima</i>	143 141		DRYOPTERIDACEAE	39 312
<i>Cyathea</i>	38	166	<i>linearis</i> var. <i>linearis</i>	9 141			377 380 382 412 418
<i>decurrens</i>		172		142		<i>Dryopteris</i>	39 382 383 394
CYATHEACEAE	38 161	166	<i>linearis</i> var. <i>montana</i>	141		<i>arborescens</i>	390 391
<i>Cyclopeltis</i>	39	412		143		<i>hasseltii</i>	391
<i>novoguineensis</i>		413	<i>Didymochlaena</i>	39 377		<i>maxima</i> *	390
<i>Cyclosorus</i> *	39		<i>truncatula</i>		378	<i>nodosa</i>	492

<i>Microlepia</i>	39 260	261	<i>pleurogrammoides</i>	504	<i>imbricata</i>	353
<i>speluncae</i>		270	<i>reinwardtii</i>	505	<i>magnifica</i>	350 354 355
<i>Microsorium</i>	39 456 457	459	<i>torricelliana</i>	506	<i>rodigasiana</i>	355 359
<i>biseriatum</i>		488 489	<i>Orthiopteris*</i>	178	sp. 1	356
<i>commutatum</i>		488 489	<i>campylura</i> var. <i>insularis*</i>	179	sp. 2	358
<i>glossophyllum</i>	490	495 498	<i>Osmolindsaea</i>	38 182	sp. 3	359
<i>linguiforme</i>		491	<i>japonica*</i>	210	POLYPODIACEAE	39 377 456
<i>membranifolium</i>		492	<i>minor</i>	11 210	<i>Polypodium*</i>	345 489
<i>papuanum</i>		493	<i>odorata*</i>	210	<i>aureum*</i>	489
<i>powellii</i>		494 496	OSMUNDACEAE	38 96	<i>Polystichum</i>	39 382 384
<i>punctatum</i>	490	495 498	P		<i>moluccense</i>	405
<i>scolopendria</i>	15 493	496	<i>Palhinhaea</i>	38 40	<i>Pronephrium</i>	39 332 334
<i>subgeminatum*</i>		493	<i>cernua</i>	13 19 41	<i>beccarianum</i>	360
sp.		498	<i>Parablechnum*</i>	302	<i>cuspidatum</i>	361
N			<i>Parathelypteris*</i>	39	<i>Prosaptia</i>	39 457 459
NEPHROLEPIDACEAE	39		<i>Phlebodium*</i>	489	<i>alata*</i>	510
		406 412	<i>aureum*</i>	489	<i>contigua</i>	508 510
<i>Nephrolepis</i>	39	406 413	<i>Phlegmariurus</i>	38 40	<i>rosenstockii</i>	510
<i>biserrata</i>	406	407 409 411	<i>carinatus</i>	42	sp.	511
<i>brownii</i>	13	408	<i>dalhousieanus</i>	44	<i>Pseudodiphasium</i>	38 40
<i>cordifolia*</i>		406	<i>filicaulon</i>	46	<i>volubile</i>	57
<i>dicksonioides</i>		409	<i>harmsii</i>	47 49 53	PSILOTACEAE	37 38 76 81
<i>hirsutula*</i>		408	<i>ignambiensis</i>	48	<i>Psilotum</i>	38 76
<i>lauterbachii</i>		410	<i>kajewskii</i>	49	<i>complanatum</i>	77 78
<i>obliterata</i>		411	<i>longus</i>	50 56	<i>nudum</i>	77 78
<i>rosenstockii*</i>		409	<i>nummulariifolius</i>	51	<i>Psomiocarpa*</i>	418
O			<i>oceanianus</i>	52	PTERIDACEAE	38 215
<i>Oceaniopteris*</i>		304	<i>phlegmaria</i>	46 47 53 54	<i>Pteridium</i>	39 260 261
<i>Odontosoria</i>	38	182	<i>phlegmarioides</i>	54	<i>aquilinum</i> subsp.	
<i>chinensis</i>		206	<i>squarrosus</i>	50 56	<i>wightianum</i>	271
<i>deltoidea</i>	17	207 208	<i>verticillatus*</i>	48	<i>esculentum*</i>	271
<i>retusa</i>	11 207	208	<i>Pityrogramma</i>	39 215 217	<i>Pteris</i>	39 215 217
<i>Oleandra</i>	39	440	<i>calomelanos</i>	237	<i>comans</i>	238
<i>neriiformis</i>		441	<i>Plagiogyria*</i>	38	<i>ensifformis</i>	239
<i>weneri</i>		442	<i>tuberculata*</i>	7	<i>ligulata</i>	240 241
OLEANDRACEAE	39	440	PLAGIOGYRIACEAE*	38	<i>pacifica</i>	240 241
<i>Ophioderma</i>	38	81	<i>Pleocnemia</i>	39 382 384	<i>papuana</i>	242 246
<i>falcatum</i>		83 84	<i>dahlia</i>	402	<i>terminalis*</i>	243
<i>pendulum</i>		83 84	<i>irregularis</i>	403	<i>torricelliana</i>	243
OPHIOGLOSSACEAE	35 38		<i>leuzeana</i>	264 402 404	<i>tripartita</i>	244 248
	76	81	<i>Plesioneuron</i>	39 332 333	<i>vitiensis</i>	242 245 246
<i>Ophioglossum</i>	38	81	<i>attenuatum</i>	11 347	<i>vittata</i>	13 242 246
<i>lineare</i>		85	<i>subglabrum</i>	348	<i>wallichiana</i> var. <i>samoensis*</i>	244 248
<i>nudicaule</i>	19	86 87	<i>Pleurogramma*</i>	504	<i>warburgii</i>	247
<i>reticulatum</i>		86 87	<i>Pneumatopteris</i>	39 330 334	<i>weneri</i>	7 248
<i>Oreogrammitis</i>	39 457	459	<i>costata</i>	350	<i>Ptisana</i>	38 88
<i>brassii</i>		500	<i>glandulifera</i>	352	<i>smithii</i>	92 94
<i>curtipila</i>		502				

<i>Ptisana</i> (cont.)		<i>enervis</i>	521	<i>novoguineense</i>	212 214
<i>ternatea</i>	92 94	<i>plantaginea</i>	521 522	<i>pinnatum</i> *	213
<i>Pyrrosia</i>	39 456 459	<i>Sphaeropteris</i>	38 166	<i>Tectaria</i>	39 418
<i>fallax</i>	512	<i>aciculosa</i> *	175	<i>angulata</i>	420 424
<i>lanceolata</i>	15 513 514	<i>brackenridgei</i>	171 173	<i>aspidioides</i>	421
<i>longifolia</i>	15 513 514	<i>lunulata</i>	174 176	<i>aurita</i>	422 432
Q		<i>truncata</i>	175	<i>bamleriana</i>	423
<i>Quercifilix</i> *	418	<i>vittata</i>	174 176	<i>christovalensis</i>	424
R		<i>Sphaerostephanos</i>	39 332 334	<i>crenata</i>	425 433
<i>Radiogrammitis</i>	39 457 460	<i>braithwaitei</i>	362 365	<i>decurrens</i>	426
<i>graminella</i>	516 518	<i>doodioides</i>	11 364 376	<i>devexa</i>	427
sp.	516 518	<i>heterocarpus</i>	362 365	<i>devexa</i> var. <i>novoguineensis</i> *	427
S		<i>invisus</i>	366 370	<i>durvillei</i>	428
<i>Saccoloma</i>	38 178	<i>polycarpus</i>	368	<i>ferruginea</i>	429 435
<i>campylurum</i> var. <i>insulare</i>	179	<i>scandens</i>	369	<i>latifolia</i> *	430
SACCOLOMATACEAE	38 178	<i>unitus</i> var. <i>mucronatus</i>	9 366	<i>melanocaula</i>	430 434 436
<i>Schizaea</i>	38 155		370	<i>menyanthidis</i>	431
<i>biroi</i>	158 160	<i>veitchii</i>	371	<i>nayarii</i>	432
<i>dichotoma</i>	158 159 160	sp. 1	372	<i>repanda</i>	425 433
sp.	158 160	sp. 2	374	<i>tahitensis</i>	434 436
SCHIZAEACEAE	38 85 150	sp. 3	376	sp. 1	435
	155	<i>Stenochlaena</i>	39 300 526	sp. 2	436
<i>Scleroglossum</i>	39 456 460	<i>cumingii</i> *	308	sp. 3	429 437
<i>sulcatum</i>	519	<i>milnei</i>	308 310	sp. 4	438
<i>Scolopendrium</i> *	283 487	<i>palustris</i>	13 308 310	TECTARIACEAE	39 380 418
<i>durvillei</i> *	283	<i>Stenosemia</i> *	418	<i>Tectaridium</i> *	418
<i>Scyphularia</i> *	449	<i>Sticherus</i>	38 140	THELYPTERIDACEAE	31 39
<i>appressa</i> *	449	<i>brassii</i> *	7 147 148		332
<i>Selaginella</i>	28 38 58	<i>hirtus</i>	147 149	<i>Themelium</i>	39 457 460
<i>biformis</i> *	59	<i>milnei</i>	148	<i>tenuisectum</i>	523
<i>birarensis</i>	59	<i>oceanicus</i>	147 149	<i>Tmesipteris</i>	38 76
<i>breyonii</i> *	60	<i>Stromatopteris</i> *	140	<i>ovata</i>	79 80
<i>breynioides</i>	60	<i>Syngamma</i>	39 215 216 217	<i>solomonensis</i>	79 80
<i>ciliaris</i>	62 63	<i>borneensis</i>	250 251	<i>tannensis</i> *	79
<i>firmula</i>	63	<i>grandis</i> *	252	<i>Tomophyllum</i>	39 457 460
<i>latifolia</i> *	60	<i>hookeri</i>	251 253	<i>repandulum</i> *	524
<i>leveriana</i>	64 66 72	<i>magnifica</i> *	252	<i>subrepandulum</i>	524
<i>nana</i>	15 65	<i>quinata</i>	252	<i>Trichomanes</i> *	98
<i>poperangensis</i>	66 72	<i>spathulata</i>	251 253	<i>millefolium</i> *	115
<i>rechingeri</i>	9 64 68	sp.	254	<i>maximum</i> *	115
<i>schlechteri</i>	60 69	T		V	
<i>sepikensis</i>	60 70	<i>Taenitis</i>	39 215 217	<i>Vaginularia</i>	39 215 217
<i>whitmeei</i>	71	<i>blechnoides</i>	256 258	<i>acrocarpa</i>	259
sp.	72	<i>diversifolia</i>	257 258	<i>Vandenboschia</i>	38 98 99
SELAGINELLACEAE	38 58	sp.	258	<i>maxima</i>	115 136
<i>Selliguea</i>	39 456 461	<i>Tapeinidium</i>	38 182 183	W	
<i>albidosquamata</i>	520	<i>denhami</i>	212 214	WOODSIACEAE*	312
		<i>melanesicum</i>	213		



The product of 34 field expeditions over 5 years, this book provides a beautiful look at the diversity of ferns and lycophytes inhabiting the Solomon Islands. With an introduction to these plants relying mostly on photographs, their morphology is readily understood. The 370 treated species, some new to science, are thoughtfully described and accompanied by photographs depicting whole plants in their natural surroundings as well as stunning close-ups to illustrate distinguishing features. This work will undoubtedly be enjoyed by, and serve as a resource for, a wide variety of readers.

–Eric Schuettpelz

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Sol *Amazing: Lycophytes & Ferns of the Solomon Islands* is beautifully illustrated, with color photographs of the majority of species found on these islands. The book provides a critical contribution to our understanding of the flora of the Pacific islands and represents a major accomplishment by four of the most knowledgeable botanists and pteridologists of the Pacific region. This work will be useful for all botanists working on Pacific islands and will open the door to similar studies on other groups of islands that are still poorly documented.

–Tom A. Ranker

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